

Appendix A

McElmo Creek Categorical Exclusion and Biological Evaluation

Categorical Exclusion for McElmo Creek Bridge Replacement on SR-262

West of Aneth, San Juan County, Utah
Navajo Indian Reservation

October 2006

Prepared for the
Utah Department of Transportation
and Federal Highway Administration



UDOT Project No. BHF-0262(6)30



Revised 3/05

ENVIRONMENTAL STUDY

Project Name: McElmo Creek Bridge Replacement
Project No. BHF-0262(6)30 PIN: 3255 Date:
Job/Proj.: 5071615D Prepared by: HDR Engineering Inc.
Address: 3995 South 700 East, Suite 100 Phone: 406-396-6223

For guidance in preparing this environmental study, refer to Chapter 4 of the UDOT Environmental Process Manual of Instruction: Environmental Manual of Instruction

REQUIRED SIGNATURES

I have reviewed the information presented in this Environmental Study and I hereby attest that the document is complete and the details of the document are correct.



Reviewers Signature Date: 11/02/06

FEDERAL AID PROJECTS

As a result of this Environmental Study, UDOT finds that this project will NOT cause significant environmental impacts and qualifies as a Categorical Exclusion Level II, under paragraph 13, according to the agreement between UDOT and FHWA for Environmental Approval Authority for selected Categorical Exclusion documents.

For CE Level II Projects:

Approved: 

UDOT Region Environmental Date: 11/13/06

For CE Level III Projects:

Review/Concur: _____ Date:
UDOT Region Environmental

For CE Level III Projects:

Approved: _____ Date:
FHWA, Utah Division

STATE FUNDED PROJECTS

As a result of this Environmental Study, UDOT finds that this project will NOT cause significant environmental impacts.

Approved:

UDOT Region Environmental

Date:

I. Purpose and Need for Action

The project consists of replacing the McElmo Creek bridge on SR-262, west of Aneth in San Juan County, Utah on Navajo tribal land. The bridge was constructed in 1963 and consists of a concrete cast-in-place deck with three main spans. The McElmo bridge project is needed because the bridge no longer meets current standards for the width of travel lanes and shoulders and bridge railings and after 42 years of service has developed some critical deficiencies as a result of scour from McElmo Creek.

The bridge was last inspected on September 24, 2003, and was determined to have an overall sufficiency rating of 15.5 out of 100. Bridges that have a sufficiency rating less than 50 are eligible for replacement. The inspection concluded that the substructure was critical as a result of extensive scour and that the bridge railing and transition were considered substandard. The width of the bridge at 28 feet does not meet the approach roadway width of 30 feet and the current standard width of 40 feet. The purpose of the project is to provide a bridge that meets current UDOT design standards while minimizing environmental impacts and disruptions to the traveling public on SR-262 during construction.

UDOT initially considered repairing the existing bridge. Based on the overall sufficiency rating of 15.5, the critical impact of the scour to the substructure, and the fact that the cost of repairing the bridge would be over 50% of the cost of replacing the bridge, UDOT decided to replace the McElmo Creek bridge and remove the existing bridge.

II. Description

Provide a written description, including project length. Attach appropriate map(s) and typical section(s) showing proposed project.

Appendix A provides a study area and design maps of the project. The project would consist of building a new bridge, realigning about 2,500 feet of roadway south of the existing bridge, and improving the intersection with County Road 2414 by adding right and left turn lanes and right and left deceleration/acceleration lanes. The bridge and road would be designed to meet current safety standards, and the number of travel lanes (two) would remain the same as the existing highway. The new roadway would consist of 12-foot travel lanes with 6-foot paved and 2-foot unpaved shoulders. UDOT anticipates that the new bridge would be designed as a single span of about 160 feet so that no piers are placed in McElmo Creek. The existing dike on the north side of the bridge might be expanded to reduce scouring of the new bridge and roadway. All or most of the existing bridge would be removed along with portions of SR-262 that are no longer needed. After the pavement is removed, the area would be graded and seeded with native vegetation. Staging areas would be placed between SR-262 and County Road 2414. The White Horse material site west of Montezuma Creek could be used for construction fill. This site is already developed and contains appropriate material. If additional material sites are required, they will be existing developed sites.

III. Roadway Function Classification

Yes The facility is classified as a Major Rural Collector or higher. This is required to be eligible for federal funding.

SR-262 is on Navajo tribal land and is considered a Major Rural Collector.

IV. Public Hearing/Opportunity for Public Hearing

- No This project will add additional through traffic lanes or substantially change the layout or function of itself or connecting roadways, including access limitations.
- No This project has a substantial adverse impact on abutting property.
- No There are significant social, economic, environmental or other effects. (If YES, a Categorical Exclusion is not applicable.)
- No FHWA has determined that a public hearing is in the public interest.

If the answer to ANY of the above questions is YES, a public hearing or opportunity for a public hearing is required (attach documentation identifying date and location of hearing, summary of comments, and responses to substantial comments or include certification of opportunity for hearing).

What types of public involvement have been provided? Check the appropriate line(s) below: Attach a brief description of the event held, comments and responses to comments.

- ☐ Public Hearing in accordance with state and federal procedures
- ☐ Opportunity for Public Hearing Advertised
- ☐ Open House
- ☐ Neighborhood Meeting

☐ Agency Meeting

☒ Other: Meeting was held at the Aneth Chapter House on the Navajo Reservation on September 11, 2005. The meeting was advertised via posted fliers in area communities, paid newspaper ads, and paid radio ads. In addition, UDOT sent a news release to an extensive media list comprised of television stations, radio stations, and newspapers.

The meeting format was similar to a community council meeting with UDOT representatives providing an overview of the project to chapter officials and public attendees. About 31 community members attended the meeting. The presentation included a project overview and an open format to respond to questions. During the meeting, no concerns were raised regarding the project and the public supported the improvement. Appendix B provides an overview of the public outreach conducted for the project.

V. Right-of-way

Yes Acquisition of right-of-way is required.

For projects that require right-of-way:

No The right-of-way required is significant because of its: size, location, use, or relationship to remaining property and abutting properties. If the right-of-way required is significant, the project **does not** qualify as a Categorical Exclusion.

New right-of-way is required, but no relocations would occur. The only property owner is the Navajo Nation. The Navajo Nation will grant an easement for the road alignment.

1 No. of parcels affected

5.7 No. of acres required

VI. Cultural

Yes The project has the potential to cause effects on historic properties. If YES, continue below. If no, attach a memo from Region NEPA/NHPA specialist indicating that the project has no potential to cause effects on historic properties.

The project area is on Navajo tribal land; therefore, coordination was conducted through the Navajo Nation Tribal Historic Preservation Officer (THPO). The project area of potential effects (APE) was inventoried for cultural resources by SWCA on October 6 and 7, 2005, and again on March 27 and 28, 2006, to account for a project redesign. One previously recorded archaeological site (42SA21456) and two isolates were identified in the project APE. In addition, as a result of ethnographic studies performed, two historic burials were also identified in the APE.

No The project meets the conditions of the MOU with SHPO for state-funded minor highway improvement projects. If YES, a memo is attached from the UDOT Region NEPA/NHPA Specialist granting cultural clearance No Cultural Coordination is complete. If NO, continue below.

☒ SHPO concurrence with the Determination of Eligibility and Finding of Effect is attached. Where applicable, Advisory Council concurrence and an executed Memorandum of Agreement are attached. Mitigation commitments are attached if applicable. (Note: All consultation must be submitted through UDOT).

The one archaeological site and two burials were determined to be not eligible for listing on the National Register of Historic Places (NRHP). However, the grave sites do merit protection under the provisions of the American Indian Religious Freedom Act (AIRFA) and under the Navajo Nation Policy for the Protection of Jishchaa'. The THPO concurred with the findings and mitigation measures to avoid impacts to the burials. See Appendix C, Pertinent Correspondence, for the THPO concurrence and Appendix D for mitigation requirements.

Native American Consultation (required for every project that has the potential to cause effects on historic properties):

Yes Letters for Native American consultation have been sent and follow-up calls have been made. See attached letters and responses from tribes if applicable. If NO, provide an explanation See Appendix C, Pertinent Correspondence.

Yes Impacts to historic properties of concern to Native American Tribes require mitigation or avoidance.
See Appendix D, Mitigation Commitments for a detailed listing of all historic properties mitigation requirements.

For Projects That Have an Adverse Effect on Historic Properties:

☐ A formal public notice has been published in area newspapers. A copy of the public notice is attached.

VII. Paleontological

No The project may affect paleontological resources.

If YES, State Paleontologist concurrence with the Finding of Effect and the monitoring and/or mitigation measures are attached.



If NO, either the project has no potential to affect the resource, or it meets the paleontological MOU conditions. A clearance memo from the UDOT Region NEPA/NHPA Specialist is attached.

Letter from the Utah Geological Survey stating that the project should have no impact on paleontological resources is attached (Appendix C).

VIII. Rare, Threatened or Endangered Species



Concurrence letter from USFWS or the UDOT Wildlife Program Manager is attached. (Note: Letters should be less than 1 year old from date of issue or they need to be updated by issuing agency.)

A Biological Evaluation as required by the Navajo Nation was prepared for the project. The evaluation concluded that there will be no effect on terrestrial species and only potential temporary impacts during construction to the habitat for the Colorado pikeminnow (Navajo Endangered Species List [NESL] Group 2, federal endangered), razorback sucker (NESL Group 2, federal endangered), bluehead sucker (NESL Group 4), and roundtail chub (NESL Group 2). A concurrence letter for the Biological Evaluation from the Navajo Nation is attached (Appendix C). The concurrence letter states that there would be no impacts to tribal and federal endangered species and no other impacts to biological resources. However, to avoid direct impacts to the Colorado pikeminnow and the razorback sucker, the Navajo Nation recommends the following: "The existing pier will be removed during the months (November - January) when flows are the lowest in the San Juan River and the project will require a NPDES permit, SWPPP, and BMPs to prevent the migration of pollutants (including sediment) from construction storm water runoff into McElmo Creek." The Biological Evaluation is included with the project administrative record.

IX. Wildlife

The following types of projects do not typically affect wildlife or habitat: installation of traffic signals, lighting, signs & pavement markings, rotomill & overlays, pavement rehabilitation, grinding & resurfacing, deck repair, installation of curb, gutter & sidewalk and minor intersection improvements

Yes Does the project have potential to affect wildlife, habitat, big game migration routes, fish passage or habitat connectivity?

No Does the project have potential to affect State Sensitive Species?

If either answer is yes, attach consultation letter from either the UDOT Wildlife Program Manager or the State Division of Wildlife Resources.

See Section VIII, Rare, Threatened, or Endangered Species for discussion on impact to fish species and concurrence from the Navajo Nation on project impacts to wildlife.

X. Invasive Species

If the project involves earthwork, grading or landscaping, there is potential to introduce or spread invasive weed species.

Yes This project has the potential to introduce or spread invasive species included on the noxious weed list of the State of Utah and the county noxious weed lists based on project location.

☒ If YES, Best Management Practices (BMP's) will be implemented to minimize the spread of invasive species. These BMP's are listed in the mitigation section and should be included in the project specifications.

The mitigation attachment (Appendix D) includes BMPs which have also been included in the project specifications.

XI. Noise

Projects that may affect noise levels to adjacent receptors include changes in roadway alignment, roadway widening and the addition of traffic lanes.

No This project has the potential to increase noise to adjacent receptors. If YES, a noise study is attached.

No sensitive receptors are adjacent to the project area, and no additional travel lanes are being added.

XII. Water Pollution, Wetlands, Floodplains, Stream Encroachments

Yes This project MAY affect wetlands, floodplains, water quality, or may encroach on a natural stream channel.

If YES, coordinate with UDOT Region Hydraulics Engineer and Region Wetland Specialist. Attach appropriate mitigation commitments and permit requirements.

A wetland delineation was conducted for the project area in 2005 and the Corps concurred with the delineation findings. Within the project area about 0.039 acres of atypical wetlands were identified in four separate areas. These discrete areas occur along the banks of the creek and are considered atypical wetlands because they periodically lack indicators of wetland hydrology during the growing season. The areas also lack hydric soil indicators because of scouring and deposition of new soil material. The atypical wetland areas are subject to grazing through out the year. The Corps identified the wetlands as atypical. The proposed project would impact portions of the atypical wetlands. McElmo Creek is also considered a water of the U.S. In total, about 0.0115 acres of atypical wetlands and 0.0332 of jurisdictional waters would be impacted (total impact 0.0447). A Nationwide Permit 14 has been submitted to the Corps. See attached for permit requirements and mitigation commitments (Appendix D).

XIII. Hazardous Waste

No A visual inspection of the project area found substances that may be hazardous to human health and/or the environment.

Yes This project involves excavation beyond or below the existing roadway footprint.

If YES is checked on either line:

Site investigations and coordination with DEQ may be necessary.

Mitigation commitments are attached if applicable.

A visual inspection of the site area was conducted on September 11, 2005, and no evidence of hazardous substances or hazardous substance generators was identified. In addition, review of the Utah Division of Environmental Response and Remediation (DERR) web site in July 2005 did not indicate any hazardous waste sites within or adjacent to the proposed construction area. No mitigation is required.

XIV. Prime, Unique, Statewide, or Local Important Farmland

Projects in areas whose land use maps indicate no current or future farming activities, would not usually affect farmlands.

No This project MAY affect Prime, Unique, Statewide, or Local Important Farmlands.

If YES, the Natural Resource Conservation Service letter and Form AD1006 are attached. (Note: Letters should be less than 1 year old from date of issue or they need to be updated by issuing agency.)

XV. Air Quality

No The project adds or alters roadway capacity or will result in increased traffic volumes (addition of through traffic lanes or intersection/signal improvements).

If YES, attach the "Air Quality Supplement".

Air Quality Construction Impacts:

Yes The project has the potential to increase particulate matter due to construction activities. If YES, Best Management Practices to minimize fugitive dust will be incorporated on the project in accordance with DAQ (Division of Air Quality) procedures.

The project is on tribal land; therefore, Navajo Nation air quality BMPs will be followed. See attached Mitigation Commitments and Permit Requirements (Appendix D) for required BMPs and coordination letter with the Navajo Nation EPA - Air Quality Control Program (30 September 2005) (Appendix C).

XVI. Relocations

No There MAY be relocations of residences or businesses as a result of this project. If YES, explanatory material is attached.

XVII. Land Use / Urban Policy

No This project MAY affect land use or urban policy. If YES, explanatory material is attached.

XVIII. Section 4(f) or Section 6(f) Properties - For Federal Aid Projects Only

No There is Section 4(f) or 6(f) involvement.

☐ A Programmatic Section 4(f) Evaluation is included.

☐ An Individual Section 4(f) Evaluation is attached. If 6(f) properties are involved, they will be addressed in the Section 4(f) Evaluation.

XIX. Other Environmental Factors Considered

This project, except as noted and explained in attachments, will have no disproportionate, serious or lasting effect on the following:

- ☒ Visual
- ☒ Social/Economic
- ☒ Title VI and/or Environmental Justice
- ☒ Natural Resources
- ☒ Construction
- ☒ Energy
- ☒ Geology/Soils
- ☒ Wild/Scenic Rivers
- ☒ Ecology

XX. Mitigation

Yes Mitigation commitments are required. If YES, a list of all commitments is attached.

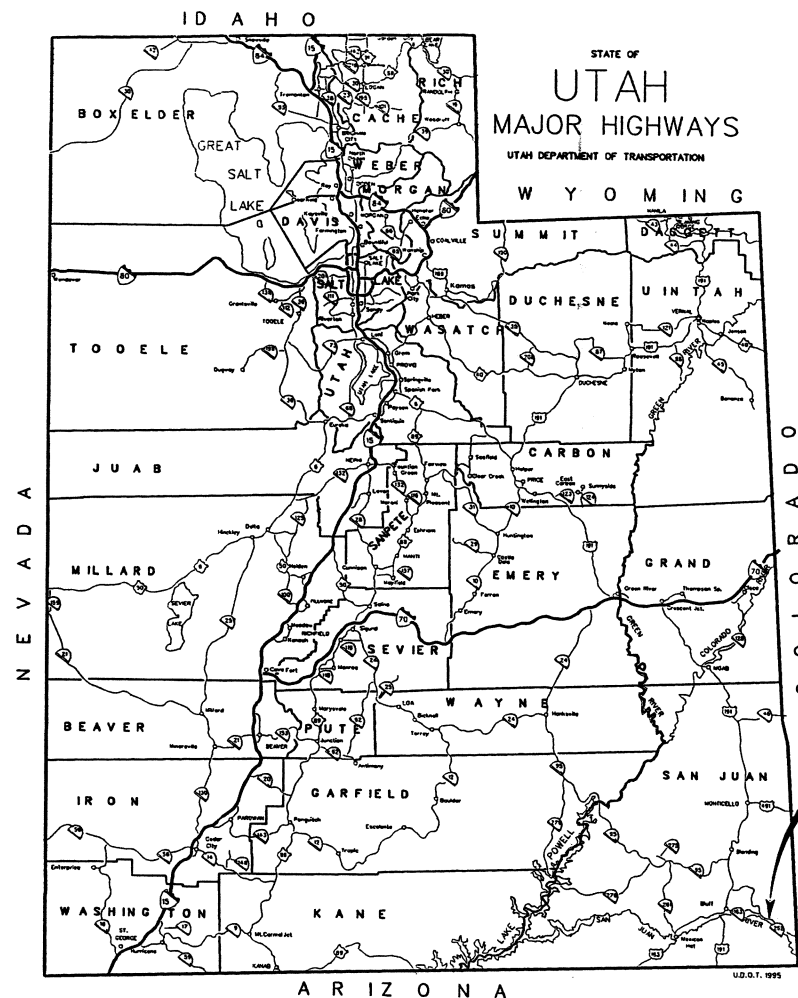
XXI. Conclusion

No The project may have substantial controversy or significant impacts. If
YES, a Categorical Exclusion is not applicable.

Appendix A: Design Sheets

Project Location Map

Design Sheets



UTAH

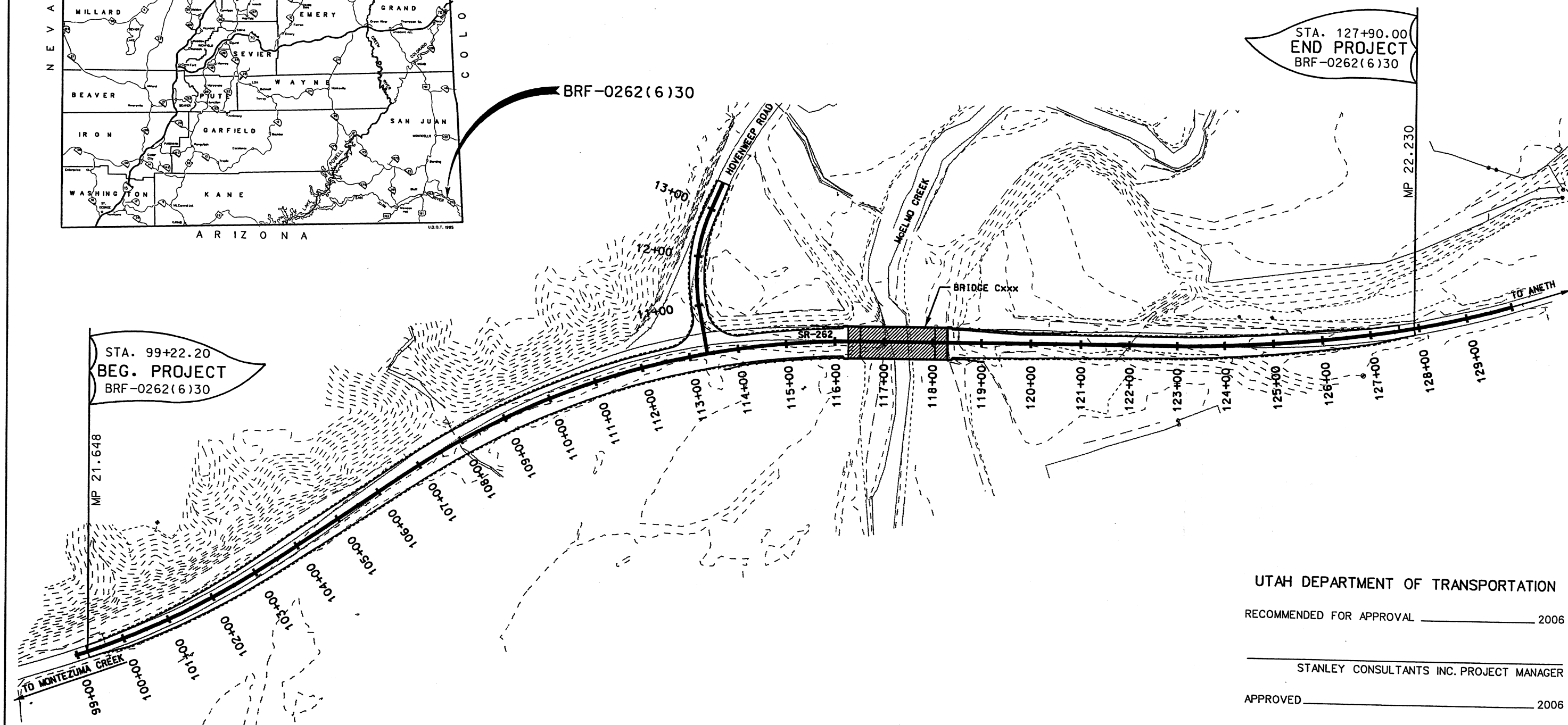
DEPARTMENT OF TRANSPORTATION

SEE SHEET 1A FOR INDEX TO PLAN

SHEET
NO.
1

U.S. Standard Units
(Inch-Pound Units)

PLANS OF STATE PROPOSED SR-262 OVER McELMO CREEK, WEST OF ANETH STATE PROJECT - BRF-0262(6)30 SAN JUAN COUNTY



UTAH DEPARTMENT OF TRANSPORTATION

RECOMMENDED FOR APPROVAL _____ 2006

STANLEY CONSULTANTS INC. PROJECT MANAGER

APPROVED _____ 2006

REGION 4 DIRECTOR

UTAH DEPARTMENT OF TRANSPORTATION

STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

DWG. NO.	DESCRIPTION	DATE
Advanced Traffic Management System (AT)		
AT 1	LEGEND SHEET	02-24-05
AT 2	RAMP METER DETAILS	02-24-05
AT 3	RAMP METER SIGN PANEL	02-24-05
AT 4	TYPICAL RAMP METER SIGNAL HEAD MOUNTING	04-28-05
AT 5	RAMP METER LOOP INSTALLATION	02-24-05
AT 6	CONDUIT DETAILS	02-24-05
AT 7	POLYMER-CONCRETE JUNCTION BOX DETAILS	02-23-06
AT 8	ATMS CABINET	02-24-05
AT 9	ATMS CABINET DISCONNECT AND TRANSFORMER FRAME	02-24-05
AT 10	CCTV MOUNTING DETAILS	02-24-05
AT 11	CCTV POLE DETAILS	02-23-06
AT 12	CCTV POLE FOUNDATION FOR DEDICATED CCTV POLE	02-24-05
AT 13	NOT USED	
AT 14	WEIGHT IN MOTION PIEZO DETAILS	02-24-05
AT 15	RWIS SITE AND FOUNDATION DETAILS	02-24-05
AT 16	RWIS TOWER BASE AND SERVICE PAD LAYOUT	02-24-05
AT 17	GROUND ROD INSTALLATION AND TOWER GROUNDING	02-24-05
AT 18	TMS DETECTION ZONE LAYOUT	02-24-05
Barriers (BA)		
BA 1A	PRECAST CONCRETE FULL BARRIER STANDARD SECTION	02-23-06
BA 1B	PRECAST CONCRETE FULL BARRIER STANDARD SECTION	08-25-05
BA 1C	PRECAST CONCRETE BARRIER TERMINAL FOR SPEED ≤40 MPH	01-01-05
BA 1D	PRECAST CONCRETE FULL SECTION-MEDIAN INSTALLATION	01-01-05
BA 1E	PRECAST CONCRETE FULL SECTION SHOULDER APPLICATIONS	01-01-05
BA 2	PRECAST CONCRETE HALF BARRIER STANDARD SECTION	01-01-05
BA 3A	CAST IN PLACE CONSTANT SLOPE BARRIER	02-24-05
BA 3B	PRECAST CONCRETE CONSTANT SLOPE TRANSITION SECTION FOR CRASH CUSHION AND W-BEAM GUARDRAIL	08-25-05
BA 4A	W-BEAM GUARDRAIL HARDWARE	01-01-05
BA 4B	W-BEAM GUARDRAIL TRANSITION	08-25-05
BA 4C	W-BEAM GUARDRAIL TRANSITION CURB SECTIONS	02-24-05
BA 4D	W-BEAM GUARDRAIL ANCHOR TYPE I	10-27-05
BA 4E	W-BEAM GUARDRAIL INSTALLATIONS	01-01-05
BA 4F	W-BEAM GUARDRAIL TYPICALS DIVIDED ROADWAYS	01-01-05
BA 4G	W-BEAM GUARDRAIL TYPICAL MULTILANE ARTERIAL	01-01-05
BA 4H	W-BEAM GUARDRAIL TYPICAL 2 LANE 2 WAY	01-01-05
BA 4I	W-BEAM GUARDRAIL BURIED IN BACKSLOPE TERMINAL	01-01-05
BA 4J	W-BEAM GUARDRAIL BURIED IN BACKSLOPE TERMINAL WITH RUB RAIL	01-01-05
BA 4K	W-BEAM GUARDRAIL BURIED IN BACKSLOPE TERMINAL ANCHOR	01-01-05
BA 4L	W-BEAM GUARDRAIL CURVE DETAILS	01-01-05
BA 4M	W-BEAM GUARDRAIL NESTED GUARDRAIL 12' 6" SPAN	01-01-05
BA 4N	W-BEAM GUARDRAIL NESTED GUARDRAIL 18' 9" SPAN	01-01-05
BA 4O	W-BEAM GUARDRAIL NESTED GUARDRAIL 25' SPAN	01-01-05
BA 4P	W-BEAM GUARDRAIL WITH PRECAST BARRIER FOR SPAN > 25'	01-01-05
BA 4Q	NOT USED	
BA 4R	W-BEAM GUARDRAIL MEDIAN BARRIER TRANSITION	10-27-05

DWG. NO.	DESCRIPTION	DATE
Catch Basins and Cleanouts (CB)		
CB 1	CURB AND GUTTER INLET	04-28-05
CB 2	OPEN CURB INLET	04-28-05
CB 3	SHALLOW CATCH BASIN	04-28-05
CB 4	OPEN CURB SHALLOW CATCH BASIN	01-01-05
CB 5A	STANDARD CATCH BASIN AND CLEANOUT BOX	06-30-05
CB 5B	STANDARD CATCH BASIN AND CLEANOUT BOX SECTION	01-01-05
CB 6A	DROP INLET TYPE "A"	01-01-05
CB 6B	BERM APRON WITH DROP INLET TYPE "A"	01-01-05
CB 7A	DROP INLET TYPE "B"	01-01-05
CB 7B	NORMAL APRON WITH DROP INLET TYPE "B"	01-01-05
CB 8A	DOUBLE CATCH BASIN	01-01-05
CB 8B	DOUBLE CATCH BASIN	01-01-05
CB 9A	STANDARD CATCH BASIN AND CLEANOUT BOX SITUATION AND LAYOUT	01-01-05
CB 9B	STANDARD CATCH BASIN AND CLEANOUT BOX SECTION DETAILS	01-01-05
CB 9C	STANDARD CATCH BASIN AND CLEANOUT BOX SCHEDULE OF INSTALLATION 18" TO 42" RCP 12" TO 48" CMP	01-01-05
CB 9D	STANDARD CATCH BASIN AND CLEANOUT BOX SCHEDULE OF INSTALLATION 48" TO 66" RCP 60" TO 78" CMP	01-01-05
CB 10A	STANDARD CATCH BASIN AND CLEANOUT BOX SITUATION AND LAYOUT	01-01-05
CB 10B	STANDARD CATCH BASIN AND CLEANOUT BOX SECTION DETAILS	01-01-05
CB 10C	STANDARD CATCH BASIN AND CLEANOUT BOX SCHEDULE OF INSTALLATION 42" TO 60" RCP 48" TO 72" CMP	01-01-05
CB 11	STANDARD MANHOLE	01-01-05
Crash Cushions (CC)		
CC 1	CRASH CUSHION MARKINGS	01-01-05
CC 2	CRASH CUSHION DRAINAGE DETAILS GUIDELINE A	01-01-05
CC 3	CRASH CUSHION DRAINAGE DETAILS GUIDELINE B	01-01-05
CC 4	DETAIL FOR PLACEMENT CRASH CUSHIONS TYPE A, B AND D	01-01-05
CC 5A	GRADING AND PLACEMENT DETAILS CRASH CUSHION TYPE C BRAKEMASTER	10-27-05
CC 5B	GRADING AND PLACEMENT DETAILS CRASH CUSHION TYPE C C.A.T.	10-27-05
CC 5C	GRADING AND PLACEMENT DETAILS CRASH CUSHION TYPE C FLEAT-MT	10-27-05
CC 6	CRASH CUSHION TYPE E SAND BARREL DETAILS	01-01-05
CC 7A	GRADING AND INSTALLATION DETAILS CRASH CUSHION TYPE F QUAD TREND 350	02-24-05
CC 7B	CRASH CUSHION TYPE F BEAT-SSCC	08-25-05
CC 8A	GRADING AND INSTALLATION DETAILS CRASH CUSHION TYPE G	04-28-05
CC 8B	GRADING AND INSTALLATION DETAILS FOR "3R" PROJECTS CRASH CUSHION TYPE G	04-28-05
CC 9A	GRADING AND INSTALLATION DETAILS CRASH CUSHION TYPE H	04-28-05
CC 9B	GRADING AND INSTALLATION DETAILS CRASH CUSHION TYPE H (PARABOLIC FLARE)	04-28-05
Diversion Boxes (DB)		
DB 1A	STANDARD DIVERSION BOX/COVER PLATE/GRATING FOR 18" DIA. OR 24" DIA. PIPE	01-01-05
DB 1B	STANDARD DIVERSION BOX HINGED LID DETAILS FOR 18" DIA. OR 24" DIA. PIPE	01-01-05
DB 1C	STANDARD DIVERSION BOX BICYCLE-SAFE GRATING DETAILS FOR 18" DIA. OR 24" DIA. PIPE	01-01-05
DB 1D	STANDARD DIVERSION BOX THREE GATE BOX SECTIONS FOR 18" DIA. OR 24" DIA. PIPE	01-01-05
DB 1E	STANDARD DIVERSION BOX THREE GATE BOX SECTIONS FOR 18" DIA. OR 24" DIA. PIPE	01-01-05
DB 1F	STANDARD DIVERSION BOX THREE GATE BOX SECTIONS FOR 18" DIA. OR 24" DIA. PIPE	01-01-05
DB 2A	STANDARD DIVERSION BOX WINTERCHANGEABLE WALLS, BOTTOM SLAB, WALLS AND APRON DETAILS	01-01-05
DB 2B	STANDARD DIVERSION BOX WINTERCHANGEABLE WALLS, QUANTITIES SCHEDULE	01-01-05

DWG. NO.	DESCRIPTION	DATE
DB 2C	STANDARD DIVERSION BOX WINTERCHANGEABLE WALLS, HAND SLIDE GATE DETAILS	01-01-05
DB 2D	STANDARD DIVERSION BOX TYPE G HAND SLIDE GATE DETAILS	01-01-05
DB 2E	STANDARD DIVERSION BOX HINGED LID (SOLID COVER PLATE) TYPE "A" DETAILS TYPE I PLAN	01-01-05
DB 2F	STANDARD DIVERSION BOX HINGED LID (SOLID COVER PLATE) TYPE "A" DETAILS TYPE II PLAN	01-01-05
DB 2G	STANDARD DIVERSION BOX HINGED LID SOLID COVER TYPE "B" DETAILS	01-01-05
DB 2H	STANDARD DIVERSION BOX HINGED LID SOLID COVER TYPE "B" AND "C" DETAILS	01-01-05
DB 3A	STANDARD DIVERSION BOX WITH MANHOLE COVER SITUATION AND LAYOUT	01-01-05
DB 3B	STANDARD DIVERSION BOX WITH MANHOLE COVER UP TO 42" RCP AND UP TO 54" CMP	01-01-05
DB 3C	STANDARD DIVERSION BOX WITH MANHOLE COVER 48" TO 72" RCP AND 60" TO 84" CMP	01-01-05
DB 4	STANDARD TRANSITION CONCRETE LINED DITCH TO PIPE OR DIVERSION BOX	01-01-05
Design (DD)		
DD 1	SUPERELEVATION AND WIDENING	01-01-05
DD 2	SURFACE DITCH, BENCHED SLOPE, AND CUT DITCH DETAILS	01-01-05
DD 3	CLIMBING LANES	01-01-05
DD 4	GEOMETRIC DESIGN FOR FREEWAYS (ROADWAY)	04-28-05
DD 5	ENTRANCE AND EXIT RAMPS AT CROSSROADS	01-01-05
DD 6	ENTRANCE AND EXIT RAMP GEOMETRICS	01-01-05
DD 7	FREEWAY CROSSOVER	01-01-05
DD 8	STRUCTURAL GEOMETRIC DESIGN STANDARDS FOR CLEARANCES	01-01-05
DD 9	STRUCTURAL GEOMETRIC DESIGN STANDARDS	01-01-05
DD 10	RAILROAD CLEARANCES AT HIGHWAY OVERPASS STRUCTURES	01-01-05
DD 11	RURAL MULTI LANE HIGHWAYS OTHER THAN FREEWAYS	01-01-05
DD 12	RURAL TWO LANE HIGHWAYS	01-01-05
DD 13	FRONTAGE AND ACCESS ROADS (UNDER 50 ADT)	01-01-05
DD 14	TYPICAL RURAL 2 LANE ROAD WITH MEDIAN LANE AND DECELERATION LANE FOR INTERSECTING CROSSROADS	01-01-05
Drainage (DG)		
DG 1	FILL HEIGHT FOR METAL PIPE (STEEL)	08-25-05
DG 2	FILL HEIGHT FOR METAL PIPE (ALUMINUM)	01-01-05
DG 3	MAXIMUM FILL HEIGHT FOR HDPE AND PVC PIPES	01-01-05
DG 4	PIPE MINIMUM COVER	01-01-05
DG 5A	PLASTIC PIPE CULVERT INSTALLATION	02-23-06
DG 5B	METAL PIPE OR PIPE ARCH CULVERT INSTALLATION	02-23-06
DG 5C	PRECAST CONCRETE PIPE CULVERT INSTALLATION	02-23-06
DG 6	SAFETY SLOPE END SECTION FOR CIRCULAR AND ARCHED PIPE	02-23-06
DG 7	GASKETTED JOINTS OR COUPLING BANDS FOR CMP	01-01-05
DG 8	METAL CULVERT END SECTION	01-01-05
DG 9	MISCELLANEOUS PIPE DETAILS	01-01-05
Environmental Controls (EN)		
EN 1	TEMPORARY EROSION CONTROL (CHECK DAMS)	08-25-05
EN 2	TEMPORARY EROSION CONTROL (SILT FENCE)	08-25-05
EN 3	TEMPORARY EROSION CONTROL (SLOPE DRAIN AND TEMPORARY BERM)	08-25-05
EN 4	TEMPORARY EROSION CONTROL (DROP INLET BARRIERS)	08-25-05
EN 5	TEMPORARY EROSION CONTROL (PIPE INLET AND CURB INLET BARRIERS)	08-25-05
EN 6	TEMPORARY EROSION CONTROL (SEDIMENT TRAP AND STABILIZED CONSTRUCTION ENTRANCE)	08-25-05
EN 7	TEMPORARY EROSION CONTROL (STRAW BALE BARRIER)	08-25-05

UTAH DEPARTMENT OF TRANSPORTATION		STANDARD DRAWING INDEX SHEET	
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION		SALT LAKE CITY, UTAH	
RECOMMENDED FOR APPROVAL		APPROVED	
CHAIRMAN STANDARDS COMMITTEE		DEPUTY DIRECTOR	
DATE		DATE	
FEB. 23, 2006		FEB. 23, 2006	
REVISIONS		REMARKS	
1	02/24/05	B.A.	CHANGE 1
2	04/28/05	B.A.	CHANGE 2
3	06/30/05	B.A.	CHANGE 3
4	06/25/05	B.A.	CHANGE 4
5	10/27/05	B.A.	CHANGE 5
6	02/23/06	B.A.	CHANGE 6
STD DWG		1-B	

MARKED BOXES INDICATE DRAWINGS APPLICABLE TO THIS PROJECT

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

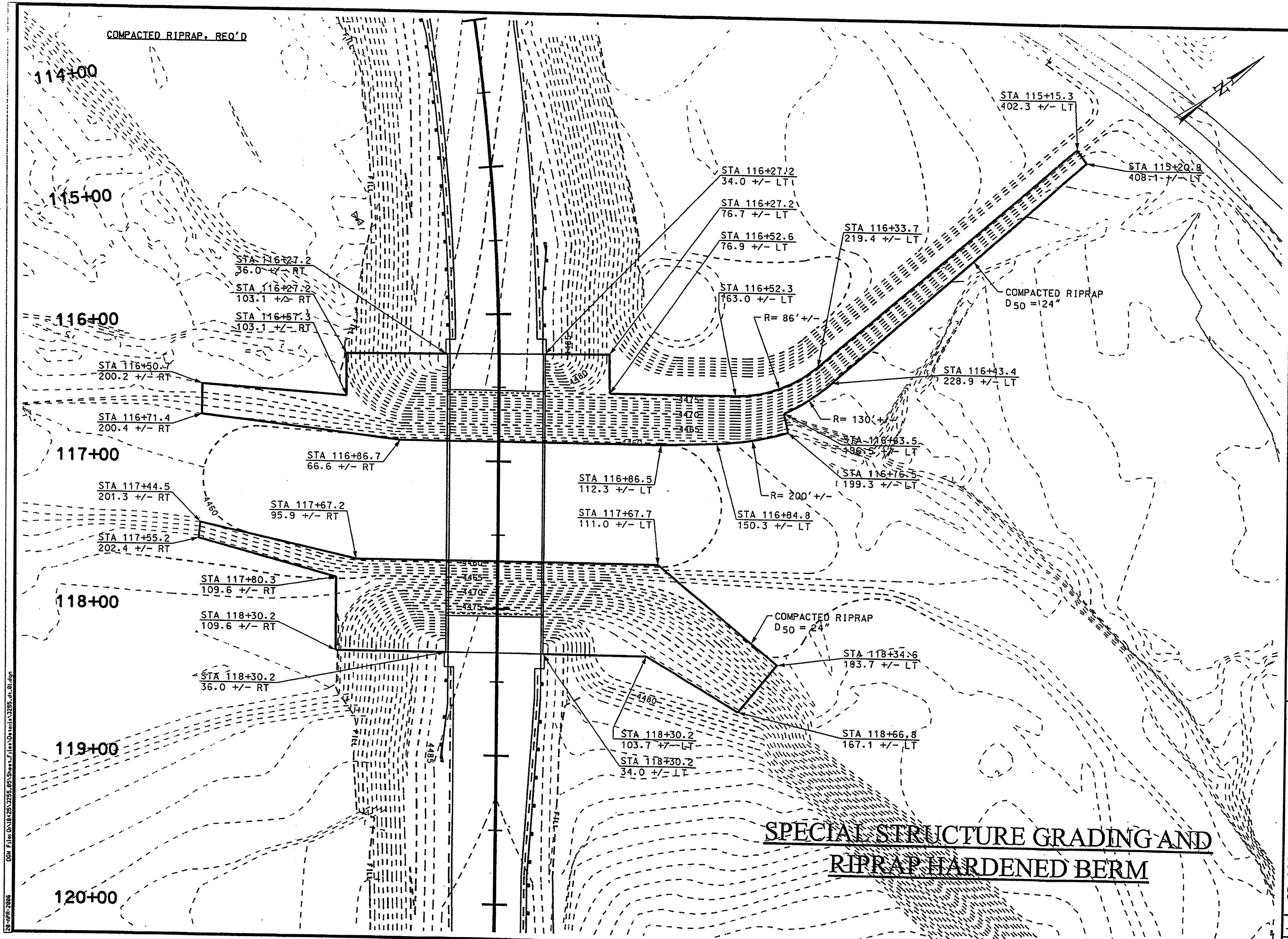
DWG. NO.	DESCRIPTION	DATE
Fence and Gates (FG)		
FG 1A	RIGHT OF WAY FENCE AND GATES (WOOD POST)	01-01-05
FG 1B	RIGHT OF WAY FENCE AND GATES (WOOD POST)	01-01-05
FG 2A	RIGHT OF WAY FENCE AND GATES (METAL POST)	01-01-05
FG 2B	RIGHT OF WAY FENCE AND GATES (METAL POST)	01-01-05
FG 3	SWING GATES TYPE I FOR GATES LESS THAN 17'	02-24-05
FG 4A	DEER CROSSING DETAILS	04-28-05
FG 4B	DEER RAMP DETAILS	04-28-05
FG 5	SWING GATES TYPE II FOR GATES WIDER THAN 17'	01-01-05
FG 6	CHAIN LINK FENCE	01-01-05
Grates, Frames and Trash Racks (GF)		
GF 1	MANHOLE FRAME AND GRATED COVER	01-01-05
GF 2	MANHOLE FRAME AND SOLID COVER	01-01-05
GF 3	RECTANGULAR GRATE AND FRAME	01-01-05
GF 4	DIRECTIONAL FLOW GRATE AND FRAME	01-01-05
GF 5	SOLID COVER AND FRAME	01-01-05
GF 6	MANHOLE STEPS	01-01-05
GF 7	STANDARD SCREW GATE AND FRAME	01-01-05
GF 8	2' x 2' GRATE AND FRAME	01-01-05
GF 9	28" x 24" DIRECTIONAL FLOW GRATE AND FRAME	01-01-05
GF 10	STANDARD TRASH RACKS 90° X-ING ANGLE	01-01-05
GF 11	STANDARD TRASH RACKS	01-01-05
GF 12	STANDARD TRASH RACKS	01-01-05
GF 13	OPEN CURB INLET GRATE AND FRAME	01-01-05
GF 14	SOLID COVER FOR STD DWG DB 1 MS-18 LOADING	01-01-05
GF 15	STANDARD SCREW GATE AND FRAME	01-01-05
General Road Work (GW)		
GW 1	RAISED MEDIAN AND PLOWABLE END SECTION	01-01-05
GW 2	CONCRETE CURB AND GUTTER	01-01-05
GW 3	CONCRETE CURB AND GUTTER DETAILS	01-01-05
GW 4	CONCRETE DRIVEWAYS AND SIDEWALKS	01-01-05
GW 5A	PEDESTRIAN ACCESS	02-23-06
GW 5B	PEDESTRIAN ACCESS	02-23-06
GW 5C	PEDESTRIAN ACCESS	06-30-05
GW 6	RIGHT OF WAY MARKER	01-01-05
GW 7	NEWSPAPER AND MAILBOX STOP LAYOUT	01-01-05
GW 8	NEWSPAPER AND MAILBOX SUPPORT HARDWARE	01-01-05
GW 9	DELINEATION HARDWARE	01-01-05
GW 10	DELINEATION APPLICATION	01-01-05
GW 11	SIDEWALKS AND SHOULDERS ON URBAN ROADWAYS	01-01-05

DWG. NO.	DESCRIPTION	DATE
Paving (PV)		
PV 1	JOINTS FOR HIGHWAYS WITH CONCRETE TRAFFIC LANES AND SHOULDERS	01-01-05
PV 2	PAVEMENT/APPROACH SLAB DETAILS	01-01-05
PV 3	CONCRETE PAVEMENT DETAILS FOR URBAN AND INTERSTATE	01-01-05
PV 4	CONCRETE PAVEMENT DETAILS FOR URBAN AND INTERSTATE	01-01-05
PV 5	URBAN CONCRETE PAVEMENT DETAILS	01-01-05
PV 6	RUMBLE STRIPS	01-01-05
PV 7	RUMBLE STRIPS-TYPICAL APPLICATION	01-01-05
PV 8	NOT USED	
PV 9	DOWEL BAR RETROFIT	01-01-05
Signals (SL)		
SL 1A	TRAFFIC SIGNAL MAST ARM POLE AND LUMINAIRE EXTENSION	02-23-06
SL 1B	TRAFFIC SIGNAL MAST ARM POLE AND LUMINAIRE EXTENSION	02-23-06
SL 2	TRAFFIC SIGNAL MAST ARM DETAILS 30' THRU 75'	02-23-06
SL 3	UNDERGROUND SERVICE PEDESTAL DETAILS	02-23-06
SL 4	TRAFFIC SIGNAL MAST ARM POLE FOUNDATION	02-23-06
SL 5	TRAFFIC SIGNAL POLE	02-23-06
SL 6	POLE MOUNTED POWER SOURCE DETAILS	01-01-05
SL 7	SPAN WIRE SIGNAL POLE DETAILS	01-01-05
SL 8	SIGNAL HEAD DETAILS	02-23-06
SL 9	PEDESTRIAN SIGNAL ASSEMBLY	01-01-05
SL 10	TRAFFIC SIGNAL CONTROLLER BASE DETAILS	02-23-06
SL 11	TRAFFIC SIGNAL LOOP DETECTOR DETAILS	02-23-06
SL 12	TRAFFIC COUNTING LOOP DETECTOR DETAILS	04-28-05
SL 13	VIDEO DETECTION CAMERA MOUNT	02-23-06
SL 14	HIGHWAY LUMINAIRE POLE GROUND MOUNT	08-25-05
SL 15	LUMINAIRE SLIP BASE DETAILS	08-25-05
SL 16	HIGHWAY LUMINAIRE POLE BARRIER MOUNT	01-01-05
SL 17	HIGHWAY LUMINAIRE POLE FOUNDATION EXTENSION	01-01-05
SL 18	SINGLE TRANSFORMER SUBSTATION DETAILS	01-01-05
Signs (SN)		
SN 1	BRIDGE LOAD LIMITS SIGNS	01-01-05
SN 2	SCHOOL SPEED LIMIT ASSEMBLY	01-01-05
SN 3	OVERHEAD SCHOOL SPEED LIMIT ASSEMBLY	01-01-05
SN 4	FLASHING STOP SIGN	01-01-05
SN 5	TYPICAL INSTALLATION FOR MILEPOST SIGNS	01-01-05
SN 6	SPEED REDUCTION SIGN SEQUENCE	01-01-05
SN 7	PLACEMENT OF GROUND MOUNTED SIGNS	01-01-05
SN 8	GROUND MOUNTED TIMBER SIGN POST (P1)	04-28-05
SN 9	GROUND MOUNTED TUBULAR STEEL SIGN POST (P2)	01-01-05
SN 10	GROUND MOUNTED SQUARE STEEL SIGN POST (P3)	01-01-05
SN 11	SLIPBASE GROUND MOUNTED TUBULAR STEEL SIGN POST (P4)	04-28-05
SN 12A	GROUND MOUNTED SIGN INSTALLATION DETAILS	08-25-05
SN 12B	GROUND MOUNTED SIGN INSTALLATION DETAILS	01-01-05
SN 12C	GROUND MOUNTED SIGN INSTALLATION DETAILS	01-01-05

DWG. NO.	DESCRIPTION	DATE
Striping (ST)		
ST 1	OBJECT MARKERS "T" INTERSECTION AND PAVEMENT TRANSITION GUIDANCE	01-01-05
ST 2	FREEWAY CROSSOVER MARKINGS	01-01-05
ST 3	TYPICAL PAVEMENT MARKINGS	01-01-05
ST 4	CROSSWALKS PARKING AND INTERSECTION APPROACHES	01-01-05
ST 5	PAINTED MEDIAN AND AUXILIARY LANE DETAILS	02-23-06
ST 6	PASSING/CLIMBING LANES TRAFFIC CONTROL	01-01-05
ST 7	PAVEMENT MARKINGS AND SIGNS AT RAILROAD CROSSING	01-01-05
ST 8	PLOWABLE PAVEMENT MARKERS	01-01-05
ST 9	SCHOOL CROSSING AND SCHOOL MESSAGE	01-01-05
Structures and Walls (SW)		
SW 1A	WELDED END GUARD UNIT	01-01-05
SW 1B	PRECAST CONCRETE CATTLE GUARD	01-01-05
SW 2	NOISE WALL PLACEMENT AREA	01-01-05
SW 3A	PRECAST CONCRETE NOISE WALL 1 OF 2	01-01-05
SW 3B	PRECAST CONCRETE NOISE WALL 2 OF 2	01-01-05
SW 4A	PRECAST CONCRETE RETAINING/NOISE WALL 1 OF 2	01-01-05
SW 4B	PRECAST CONCRETE RETAINING/NOISE WALL 2 OF 2	02-23-06
Traffic Control (TC)		
TC 1A	CONSTRUCTION ZONE CHANNELIZATION DEVICES	01-01-05
TC 1B	CONSTRUCTION ZONE SIGNING	01-01-05
TC 2A	TRAFFIC CONTROL GENERAL	01-01-05
TC 2B	TRAFFIC CONTROL GENERAL	01-01-05
TC 3	TRAFFIC CONTROL PROJECT LIMIT SIGNING	01-01-05
TC 4	TRAFFIC CONTROL URBAN INTERSECTIONS WITH ROADWAYS UNDER 50 MPH	01-01-05
TC 5	TRAFFIC CONTROL URBAN INTERSECTIONS WITH ROADWAYS UNDER 50 MPH	01-01-05
TC 6	TRAFFIC CONTROL PEDESTRIAN ROUTING	01-01-05
TC 7	TRAFFIC CONTROL ROAD CLOSED, DETOUR	01-01-05
TC 8	TRAFFIC CONTROL LANE CLOSURE	01-01-05
TC 9	TRAFFIC CONTROL MULTILANE CLOSURE	01-01-05
TC 10	TRAFFIC CONTROL EXPRESSWAY AND FREEWAY CROSSOVER/TURN AROUND	01-01-05
TC 11	TRAFFIC CONTROL EXIT RAMP GORE	01-01-05
TC 12	TRAFFIC CONTROL ENTRANCE RAMP GORE	01-01-05
TC 13	TRAFFIC CONTROL SHOULDER-HAUL ROAD	01-01-05
TC 14	TRAFFIC CONTROL FLAGGING OPERATION	01-01-05
TC 15	TRAFFIC CONTROL 2 LANE / 2 WAY SEAL COAT WITH COVER MATERIAL	01-01-05
TC 16	TRAFFIC CONTROL PAVEMENT MARKING	01-01-05

REVISIONS		DATE		REMARKS	
1	02/24/05	B.A.	CHANGE 1		
2	04/26/05	B.A.	CHANGE 2		
3	06/30/05	B.A.	CHANGE 3		
4	08/25/05	B.A.	CHANGE 4		
5	02/23/06	B.A.	CHANGE 5		
6			CHANGE 6		
UTAH DEPARTMENT OF TRANSPORTATION STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION SALT LAKE CITY, UTAH					
RECOMMENDED FOR APPROVAL					
CHAIRMAN STANDARDS COMMITTEE					
APPROVED					
DEPUTY DIRECTOR					
STANDARD DRAWING INDEX SHEET					
STD DWG 1-C					

MARKED BOXES INDICATE DRAWINGS APPLICABLE TO THIS PROJECT

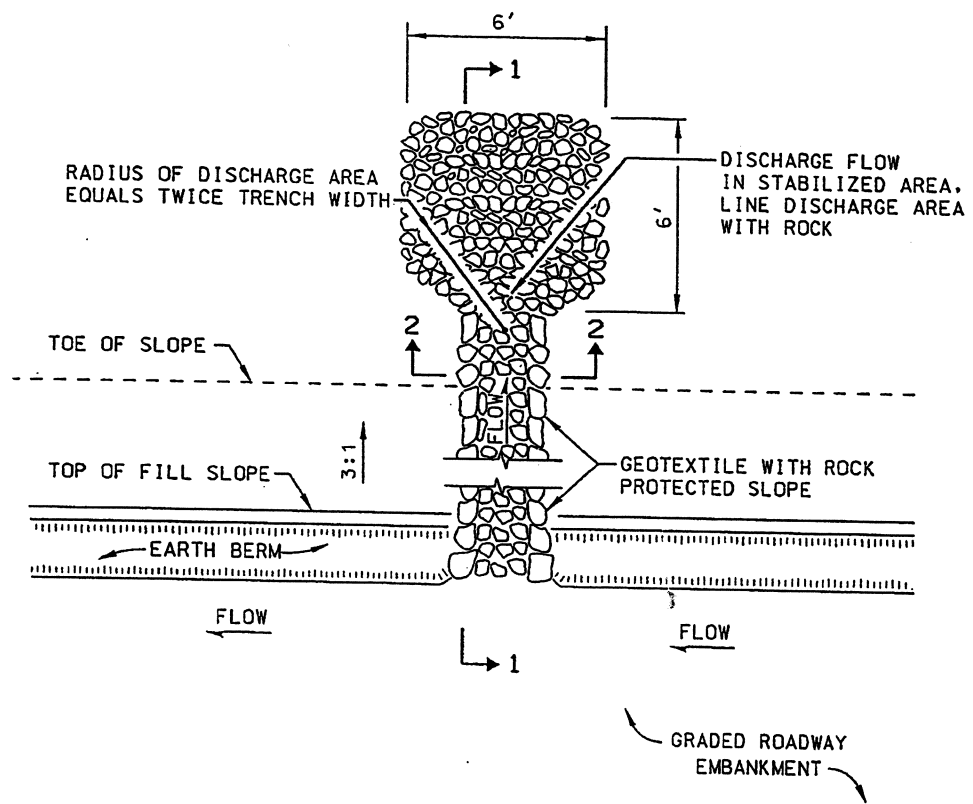


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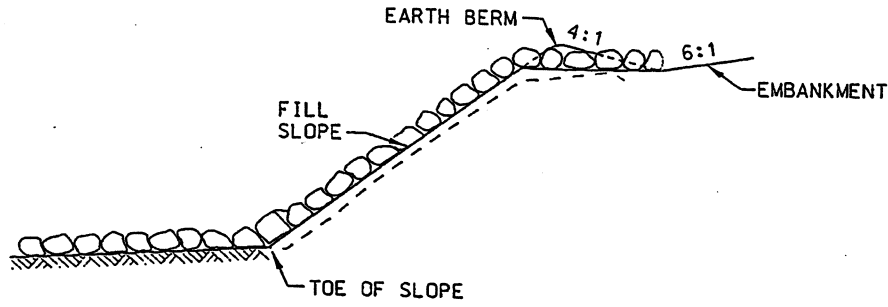
PRELIMINARY
NOT FOR CONSTRUCTION
20-APR-2006

SR-262 OVER MCELMO CREEK, WEST OF ANETH		UTAH DEPARTMENT OF TRANSPORTATION REGION FOUR -- RICHFIELD, UTAH ROADWAY DESIGN																			
GRADING & RIPRAP BERM DETAIL		APPROVAL RECOMM.		4/20/06 DATE		TRENT HANSON PROJECT DESIGN ENGINEER		DESIGN		TEH		2-06		CHECK		REJ		4-06		REVIEW	
		APPROVED BY		4/20/06 DATE		ROBERT JACOBS PRECONSTRUCTION ENGINEER		DRAWN		GLO		2-06		CHECK		REJ		4-06		DATE	
PROJECT NUMBER		BRF-0262(6)30																			
SAN JUAN COUNTY																					
SHEET NO.		DT-1																			

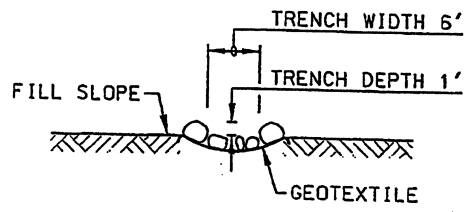
SLOPE DRAIN DETAIL



PLAN - FILL SLOPE DRAIN



SECTION 1

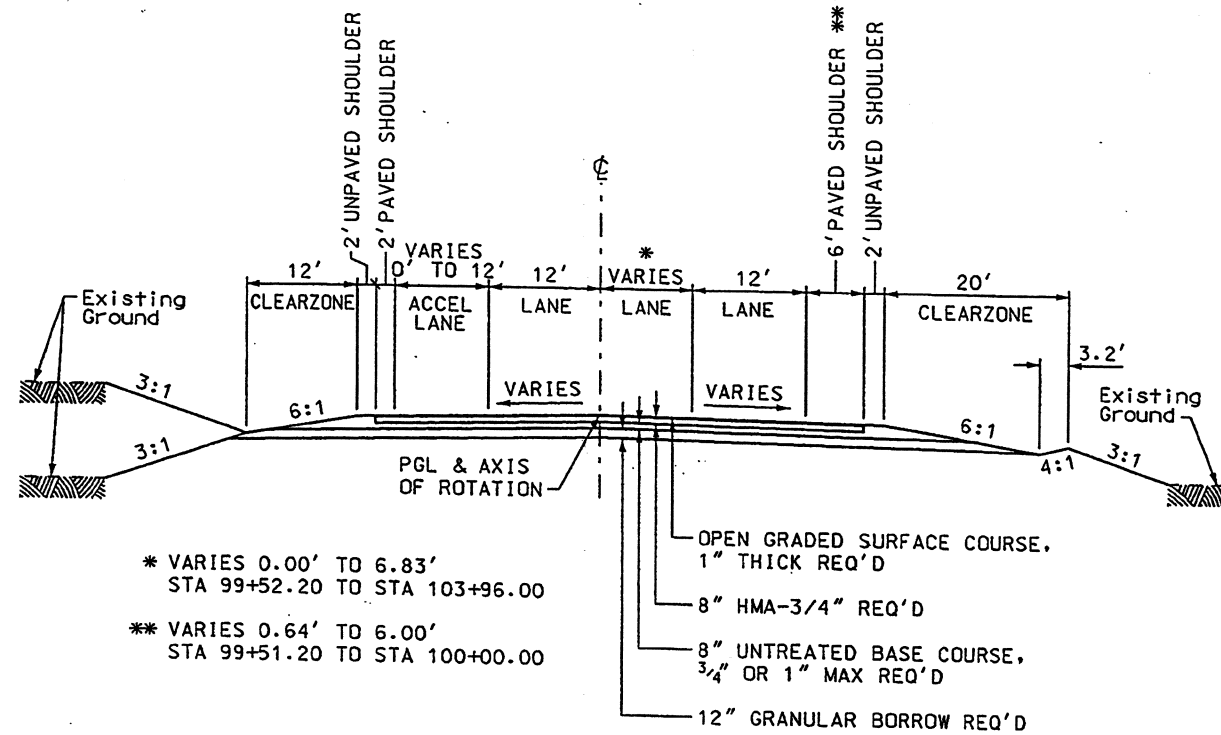


SECTION 2

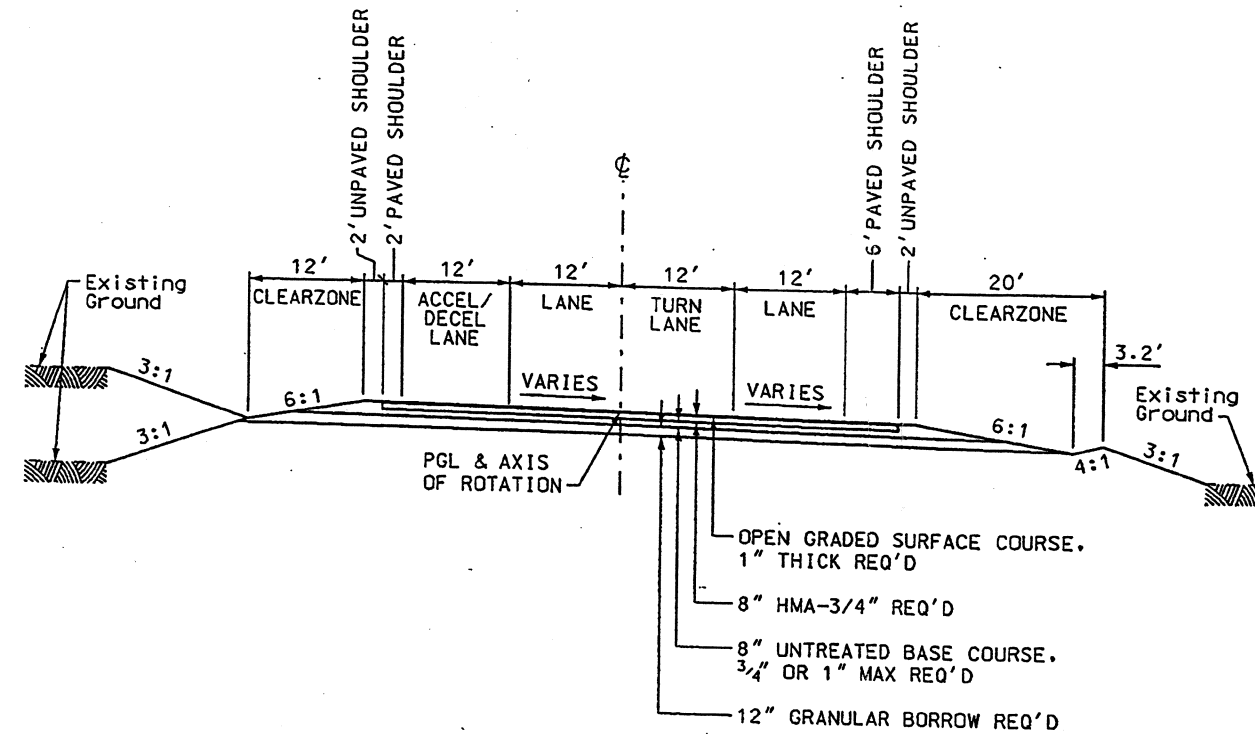
PRELIMINARY
NOT FOR CONSTRUCTION
20-APR-2006

SR-262 OVER McELMO CREEK, WEST OF ANETH		UTAH DEPARTMENT OF TRANSPORTATION REGION FOUR -- RICHFIELD, UTAH ROADWAY DESIGN																			
SLOPE DRAIN DETAIL		APPROVAL RECOMM.		4/20/06		TRENT HANSON		DESIGN		TEH		2-06		CHECK		REJ		4-06		REVIEW	
PROJECT NUMBER		APPROVED		4/20/06		ROBERT JACOBS		DRAWN		GLO		2-06		CHECK		REJ		4-06		DATE	
BRF-0262(6)30		BY		UDOT		DATE		PRECONSTRUCTION		ENGINEER		QUANT.		CHECK						BY	
SAN JUAN COUNTY																					
SHEET NO.		DT-2																			

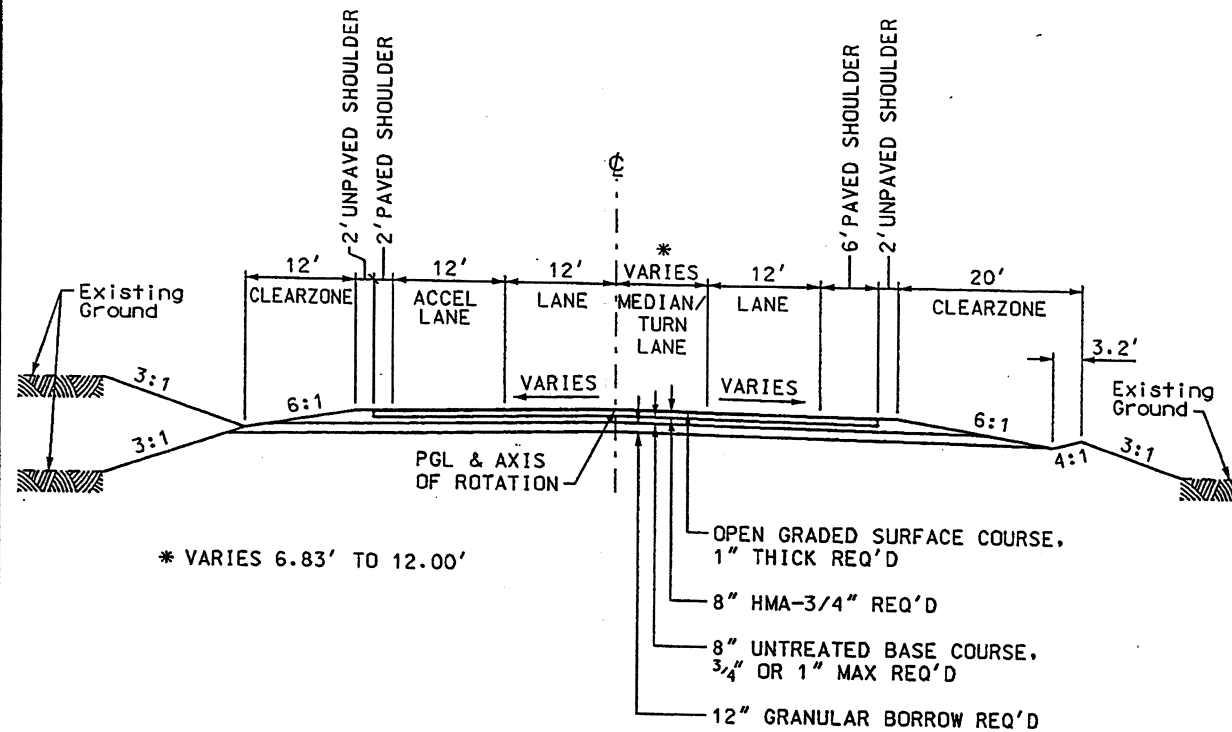
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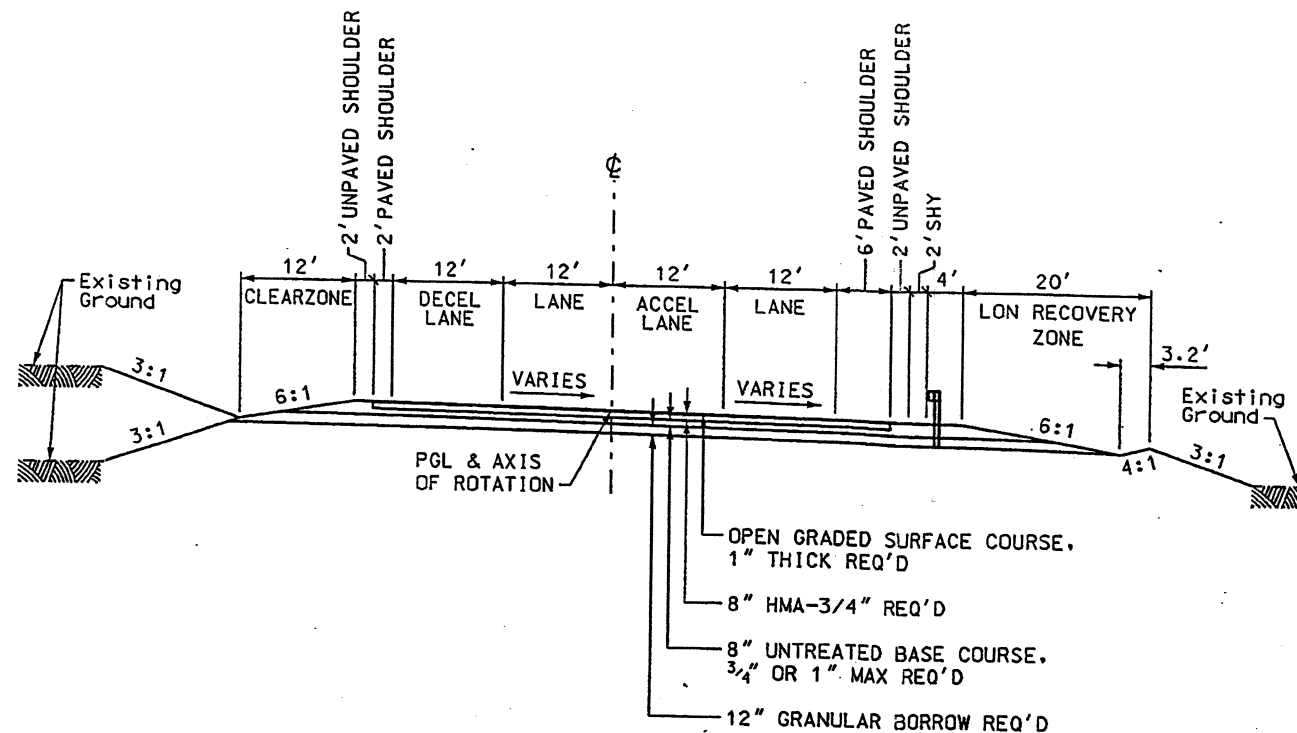
SR-262
TYPICAL SECTION 1
STA 99+22.00 TO STA 103+96.00



SR-262
TYPICAL SECTION 3
STA 107+32.00 TO STA 113+66.55



SR-262
TYPICAL SECTION 2
STA 103+96.00 TO STA 107+32.00



SR-262
TYPICAL SECTION 4
STA 114+01.16 TO STA 115+54.66

PRELIMINARY
NOT FOR CONSTRUCTION
20-APR-2006

UTAH DEPARTMENT OF TRANSPORTATION
REGION FOUR -- RICHFIELD, UTAH
ROADWAY DESIGN

APPROVAL	DATE	DESIGN	TECH	CHECK	REJ	REVIEW
RECOMM.	4/20/06	DESIGN	TEH	2-06	4-06	4-06
DATE	4/20/06	PROJECT	DESIGN	ENGINEER	CHECK	REJ
DATE	4/20/06	PROJECT	DESIGN	ENGINEER	CHECK	REJ
DATE	4/20/06	PROJECT	DESIGN	ENGINEER	CHECK	REJ

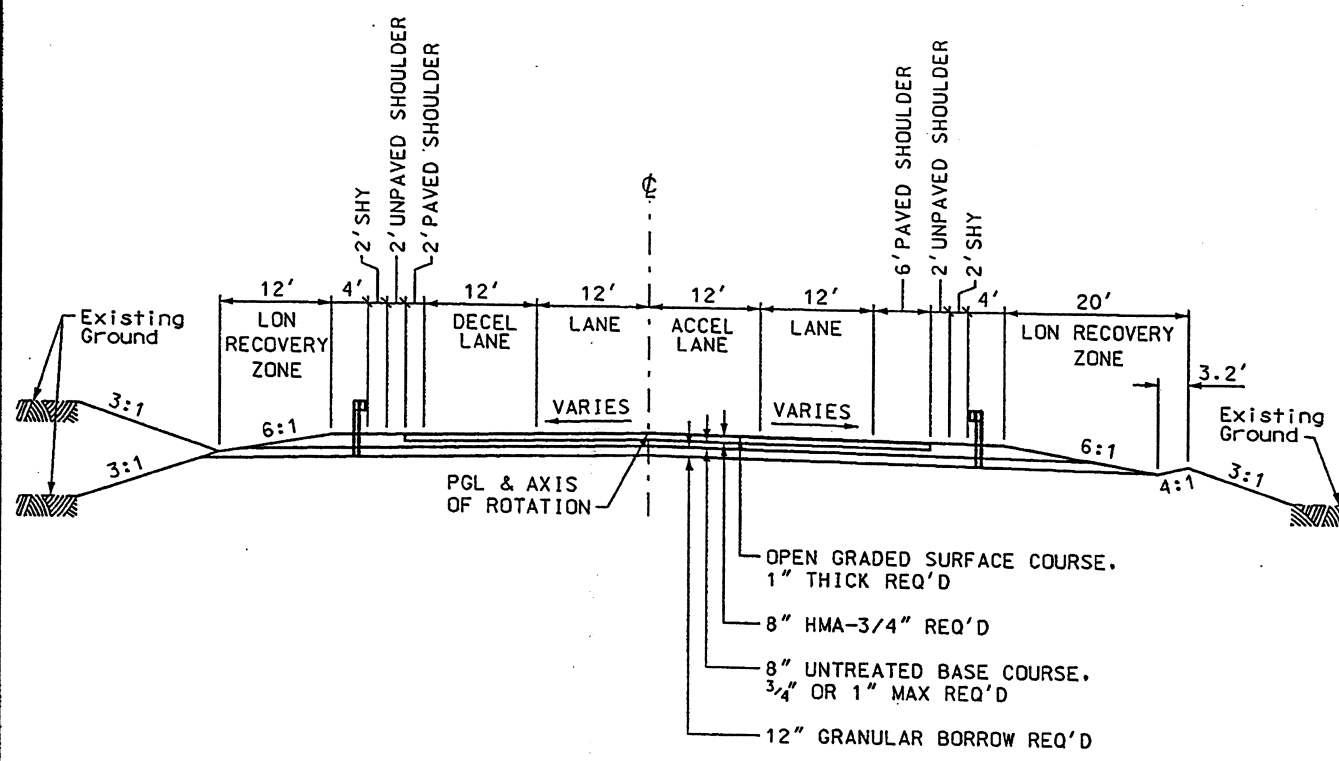
SR-262 OVER MCELMO CREEK,
WEST OF ANETH
TYPICAL SECTIONS

PROJECT
NUMBER
BRF-0262(6)30

SAN JUAN
COUNTY

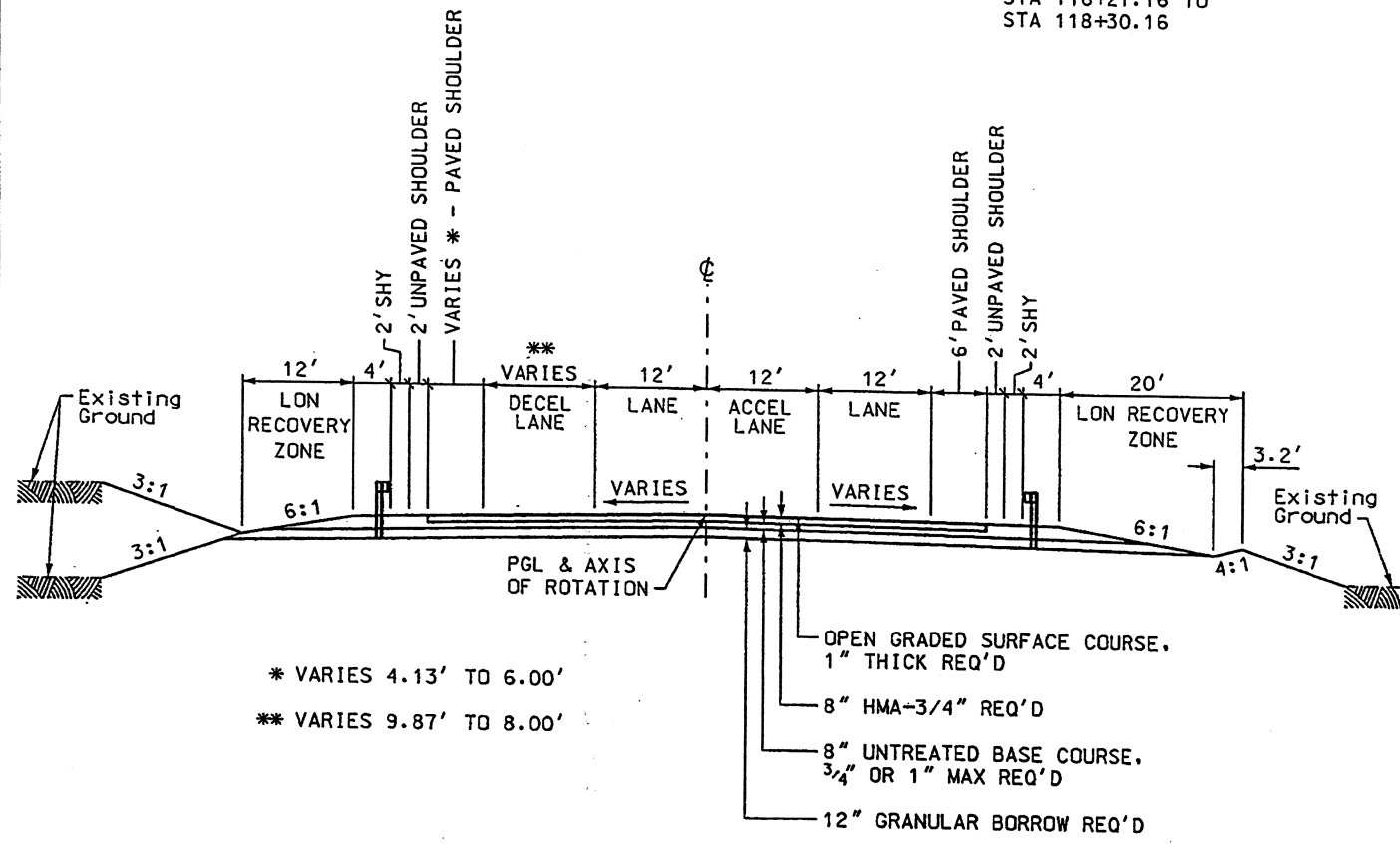
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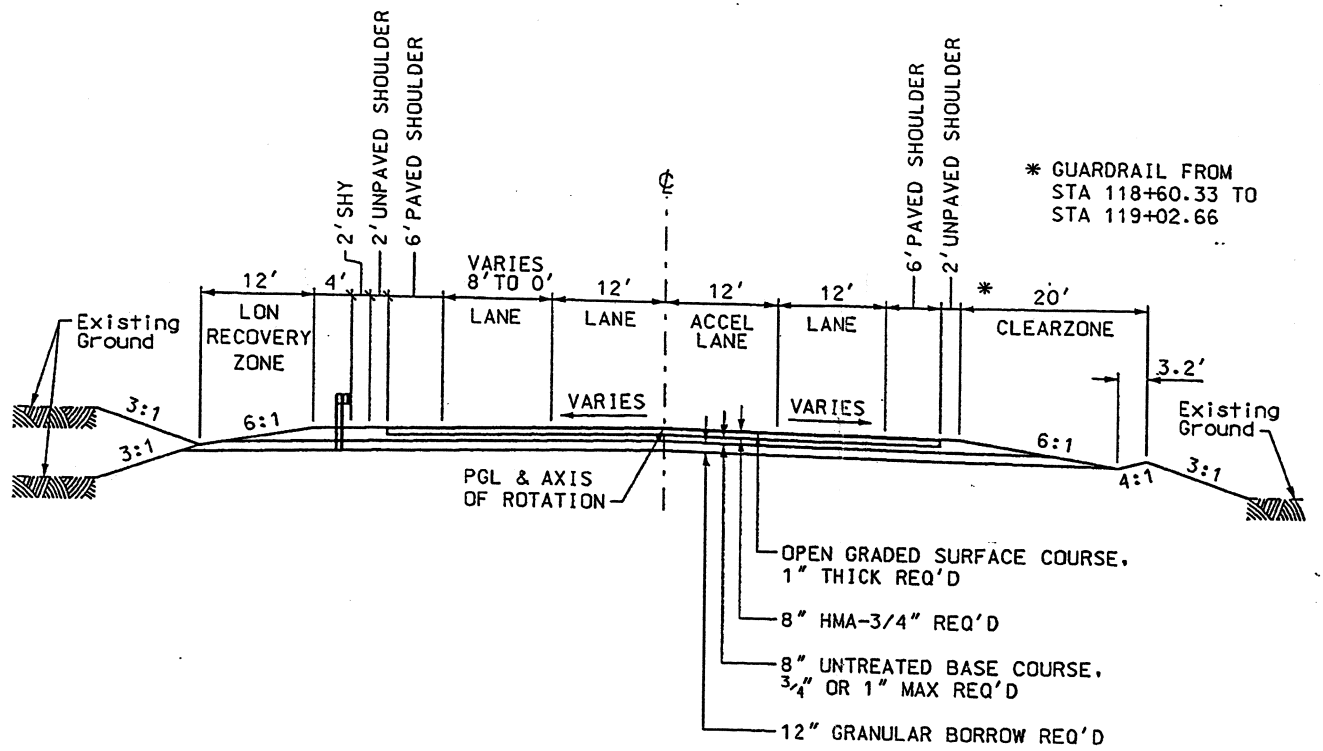


SR-262
TYPICAL SECTION 5
STA 115+54.16 TO STA 116+27.16 *

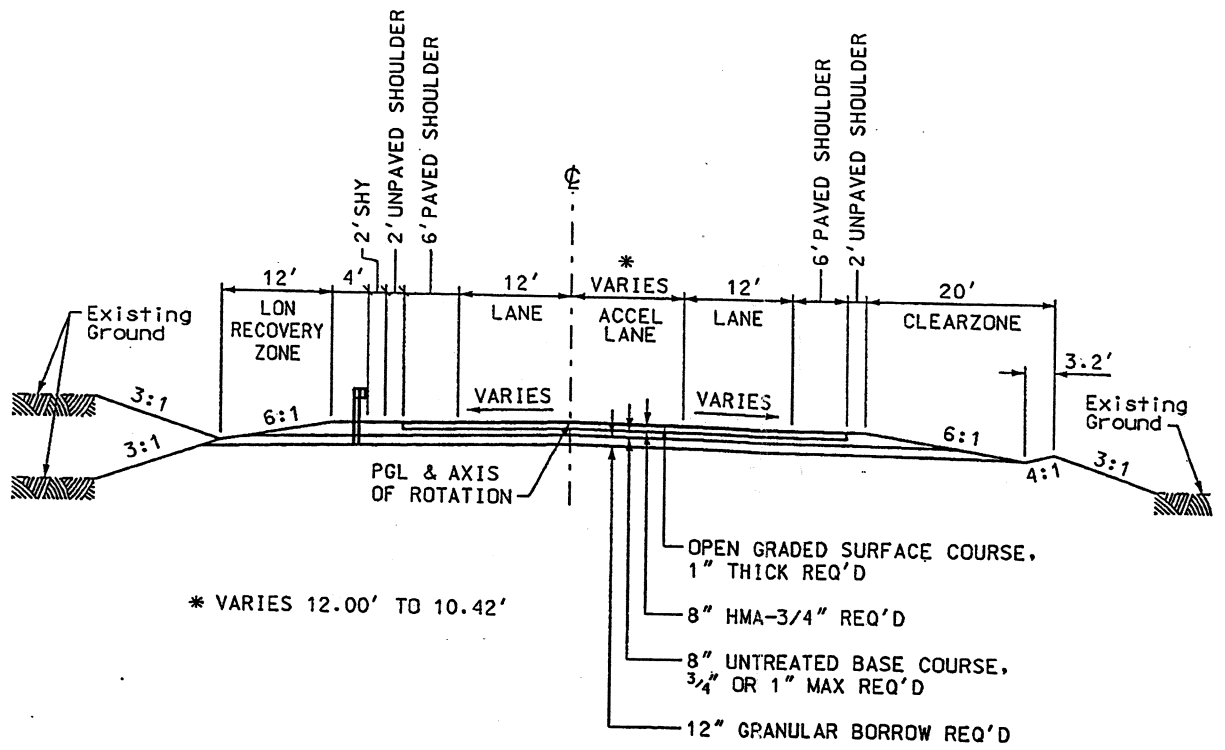
* BRIDGE CXXX FROM
STA 116+27.16 TO
STA 118+30.16



SR-262
TYPICAL SECTION 6
STA 118+30.16 TO STA 118+60.33



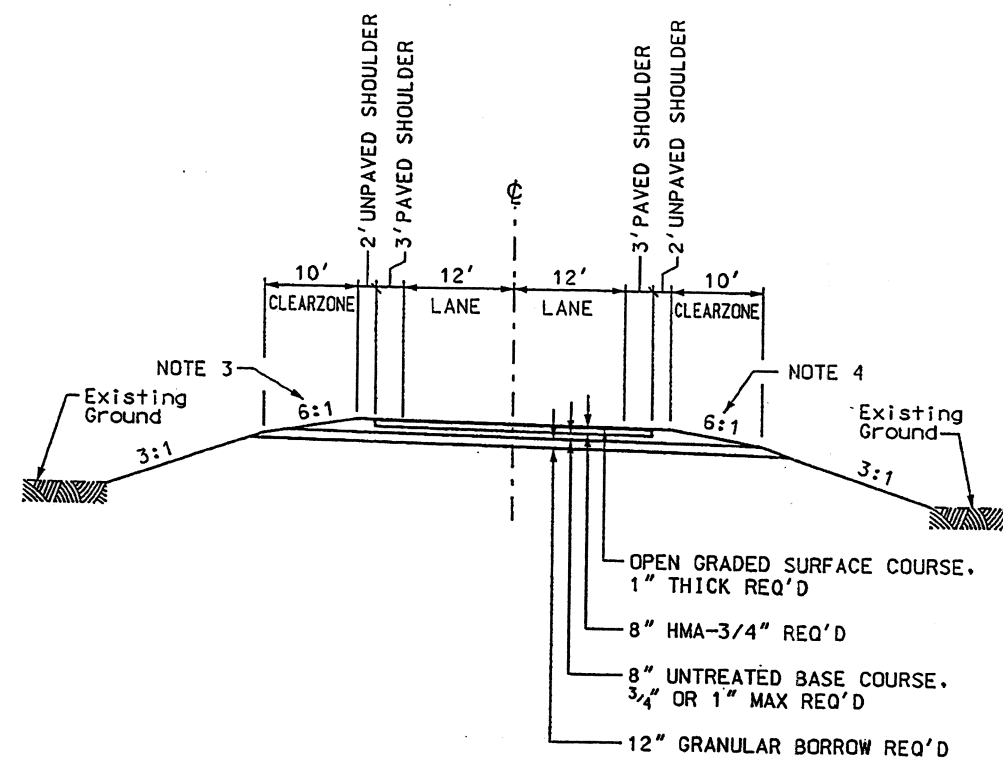
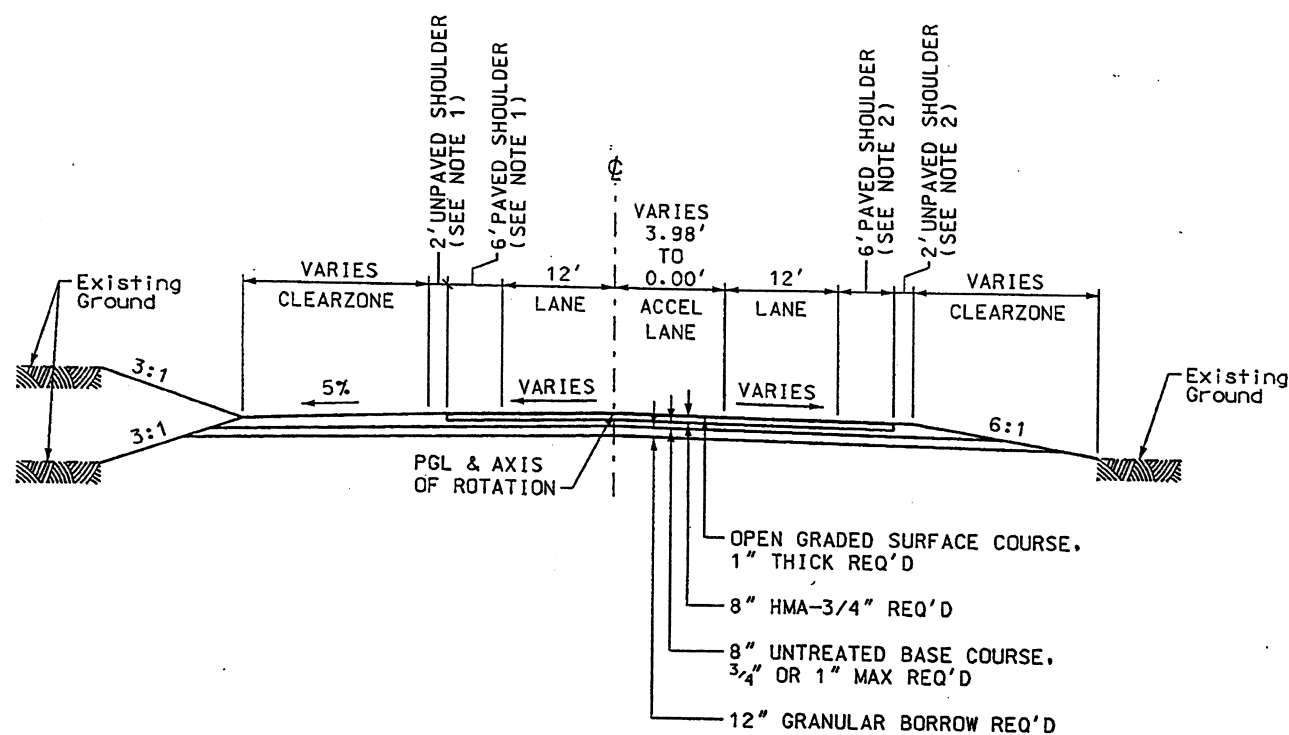
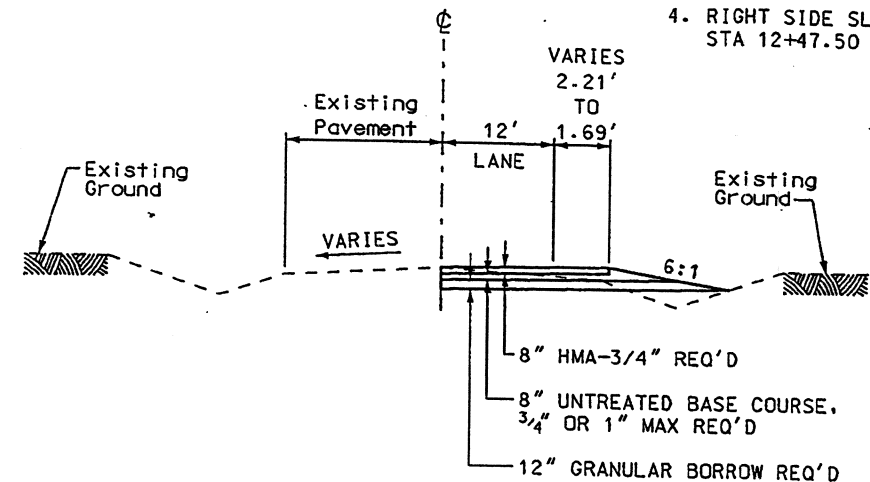
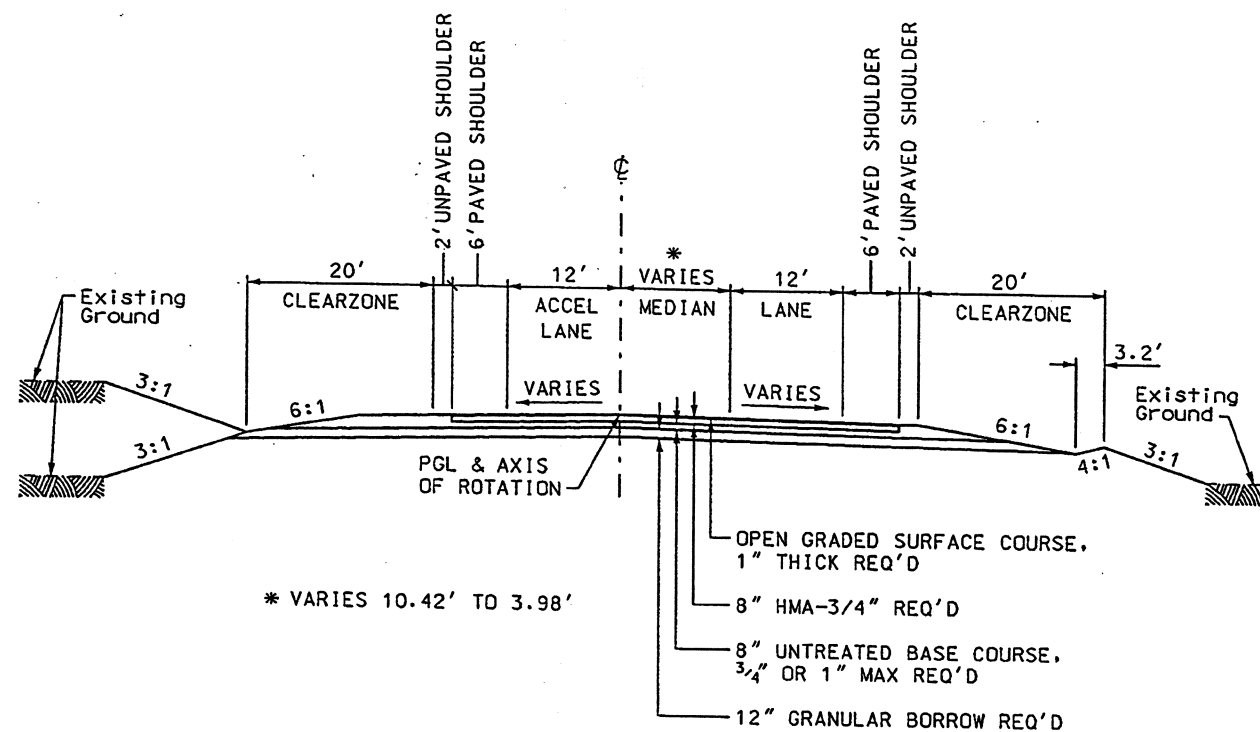
SR-262
TYPICAL SECTION 7
STA 118+60.33 TO STA 119+80.00



SR-262
TYPICAL SECTION 8
STA 119+80.00 TO STA 120+90.16

PRELIMINARY
NOT FOR CONSTRUCTION
20-APR-2006

SR-262 OVER MCLEND CREEK, WEST OF ANETH	UTAH DEPARTMENT OF TRANSPORTATION REGION FOUR -- RICHFIELD, UTAH ROADWAY DESIGN			
	APPROVAL RECOMM.	DATE 4/20/06	DESIGN TEH	2-06
	APPROVED BY	DATE 4/20/06	CHECK REJ	4-06
	PROJECT NUMBER	BRF-0262(6)30	CHECK REJ	4-06
TYPICAL SECTIONS		DESIGN TEH	2-06	REVIEW
		PROJECT DESIGN ENGINEER	CHECK REJ	4-06
		PRECONSTRUCTION ENGINEER	CHECK	BY
SAN JUAN COUNTY				
SHEET NO.		TS-2		



- NOTES:

1. PAVED SHOULDER VARIES FROM 6.0' AT STA 126+10.00 TO 0.47' AT STA 127+00.00
UNPAVED SHOULDER ENDS AT STA 127+00.00
2. PAVED SHOULDER VARIES FROM 6.0' AT STA 127+03.08 TO 2.21' AT STA 127+60.00
UNPAVED SHOULDER ENDS AT STA 127+60.00
3. LEFT SIDE SLOPE IS 10:1 FROM STA 12+75.00 TO STA 13+59.10
4. RIGHT SIDE SLOPE IS 10:1 FROM STA 12+47.50 TO STA 13+59.10

2. PAVED SHOULDER VARIES FROM 6.0' AT
STA 127+03.08 TO 2.21' AT STA 127+60.00
UNPAVED SHOULDER ENDS AT STA 127+60.00

3. LEFT SIDE SLOPE IS 10:1 FROM
STA 12+75.00 TO STA 13+59.10

4. RIGHT SIDE SLOPE IS 10:1 FROM
STA 12+47.50 TO STA 13+59.10

UTAH DEPARTMENT OF TRANSPORTATION
REGION FOUR -- RICHFIELD, UTAH

SR-262 OVER MCELMO CREEK,

TYPICAL SECTIONS

PROJECT
NUMBER

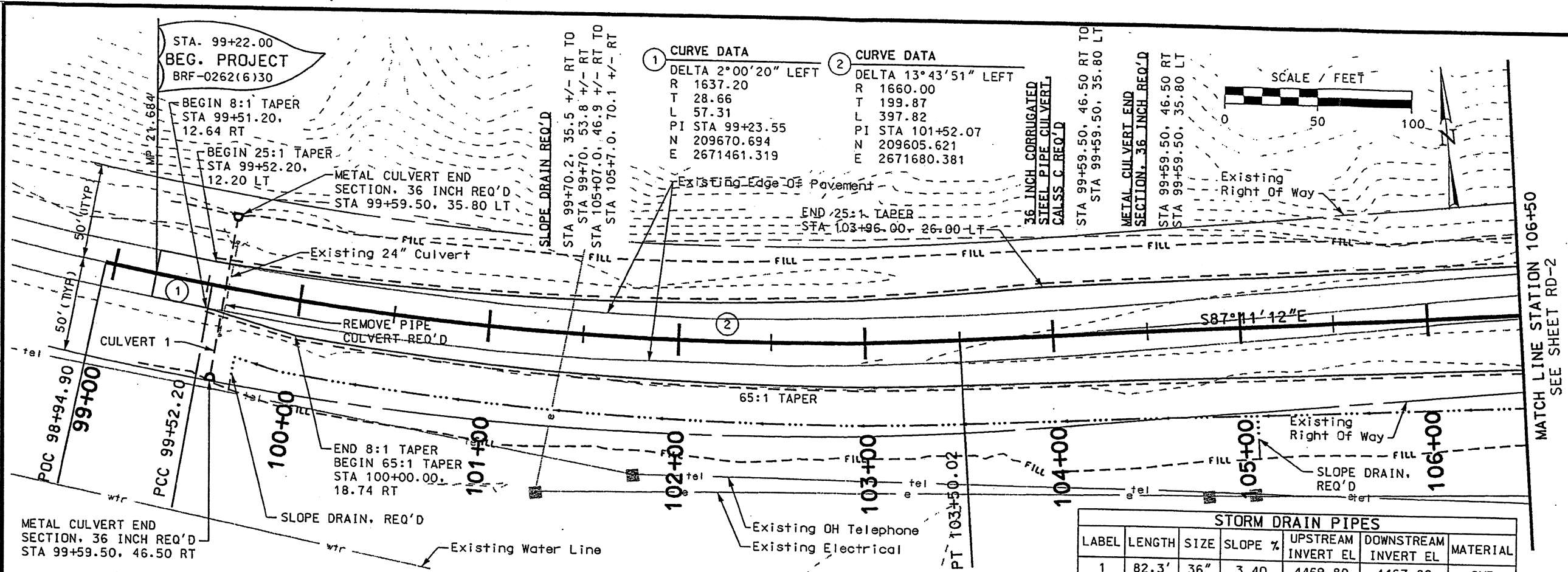
SAN JUAN
COUNTY

SHEET NO. TS-3

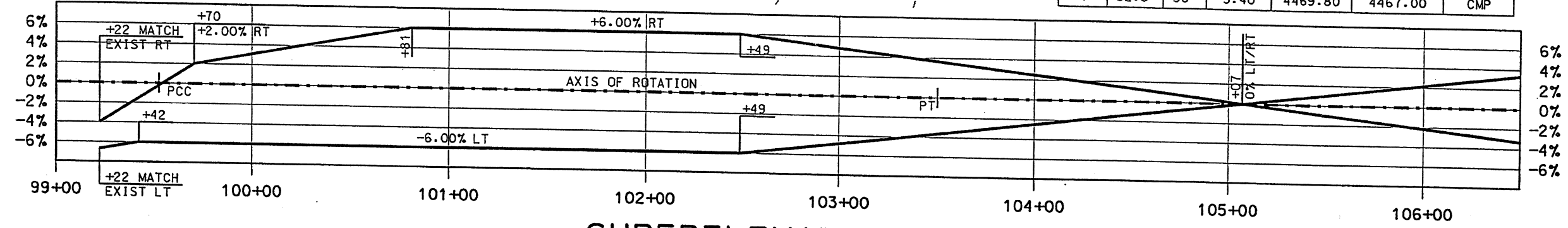
PRELIMINARY
NOT FOR CONSTRUCTION

20-APR-2006

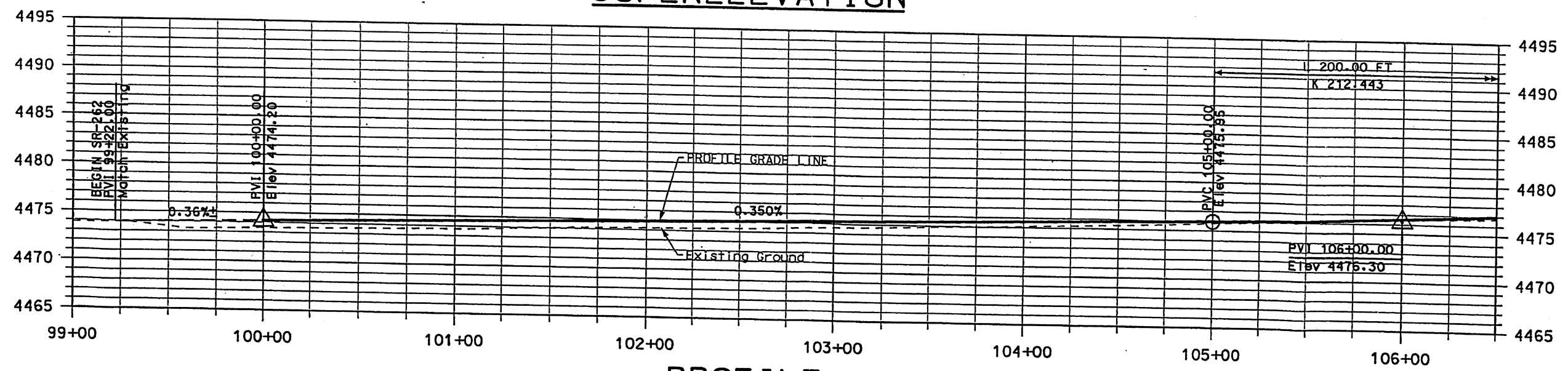
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STORM DRAIN PIPES						
LABEL	LENGTH	SIZE	SLOPE %	UPSTREAM INVERT EL	DOWNSTREAM INVERT EL	MATERIAL
1	82.3'	36"	3.40	4469.80	4467.00	CMP



SUPERELEVATION



PROFILE

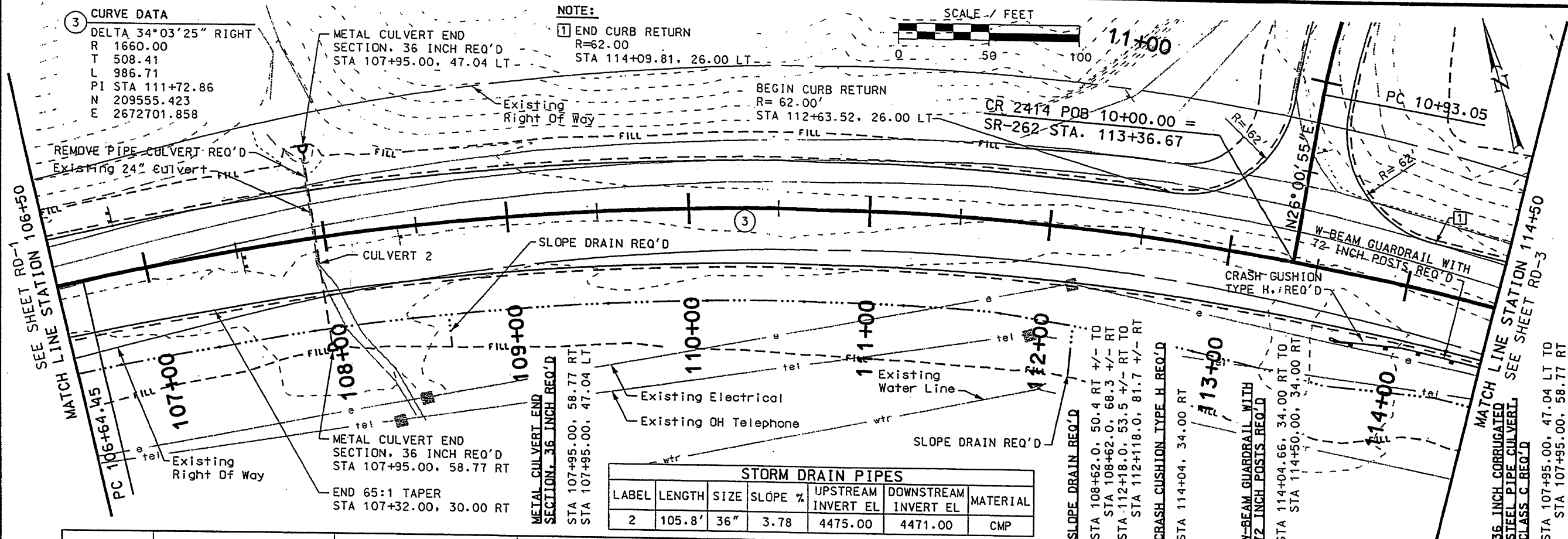
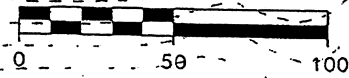
PRELIMINARY
NOT FOR CONSTRUCTION
20-APR-2006

UTAH DEPARTMENT OF TRANSPORTATION REGION FOUR -- RICHFIELD, UTAH ROADWAY DESIGN			
APPROVAL RECORD	DATE 4/20/06	DESIGN TECH 2-06	CHECK REJ 4-06
PROJECT DESIGN ENGINEER TRENT HANSON		QUANT.	BY
APPROVED FOR USE 4/20/06		CHECK REJ 4-06	DATE
BY LUOT		CHECK	DATE
PROJECT NUMBER BRF-0262(6)30		CONSTRUCTION ENGINEER	
SR-262 OVER MCLEMO CREEK, WEST OF ANETH ROADWAY PLAN AND PROFILE			
SAN JUAN COUNTY			
SHEET NO. RD-1			

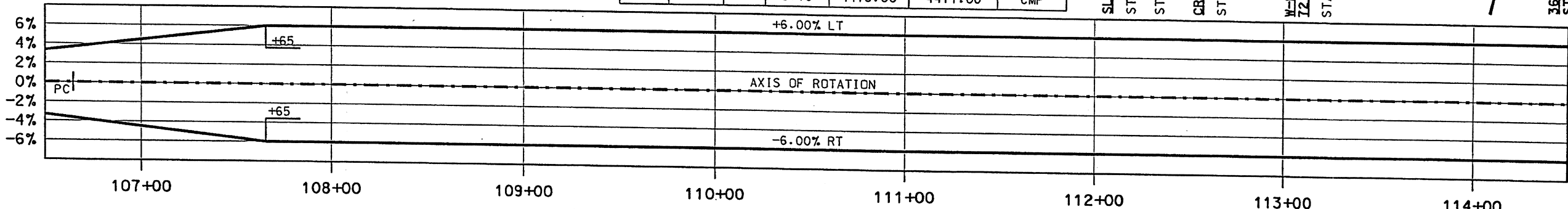
③ CURVE DATA
 DELTA 34°03'25" RIGHT
 R 1660.00
 T 508.41
 L 986.71
 PI STA 111+72.86
 N 209555.423
 E 2672701.858

NOTE:
 ① END CURB RETURN
 R=62.00
 STA 114+09.81, 26.00 LT

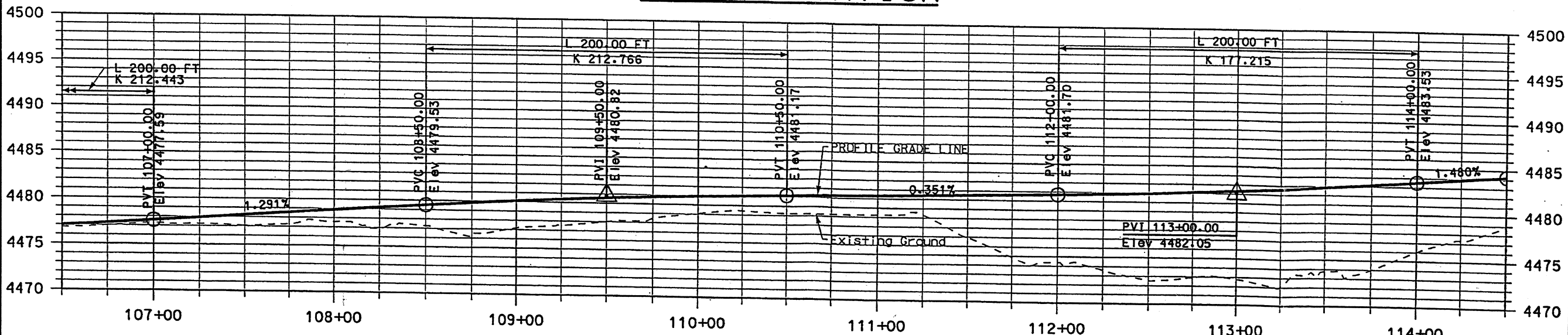
SCALE - FEET



STORM DRAIN PIPES						
LABEL	LENGTH	SIZE	SLOPE %	UPSTREAM INVERT EL	DOWNSTREAM INVERT EL	MATERIAL
2	105.8'	36"	3.78	4475.00	4471.00	CMP



SUPERELEVATION



PROFILE

PRELIMINARY
NOT FOR CONSTRUCTION
 20-APR-2006

UTAH DEPARTMENT OF TRANSPORTATION
 REGION FOUR -- RICHFIELD, UTAH
 ROADWAY DESIGN

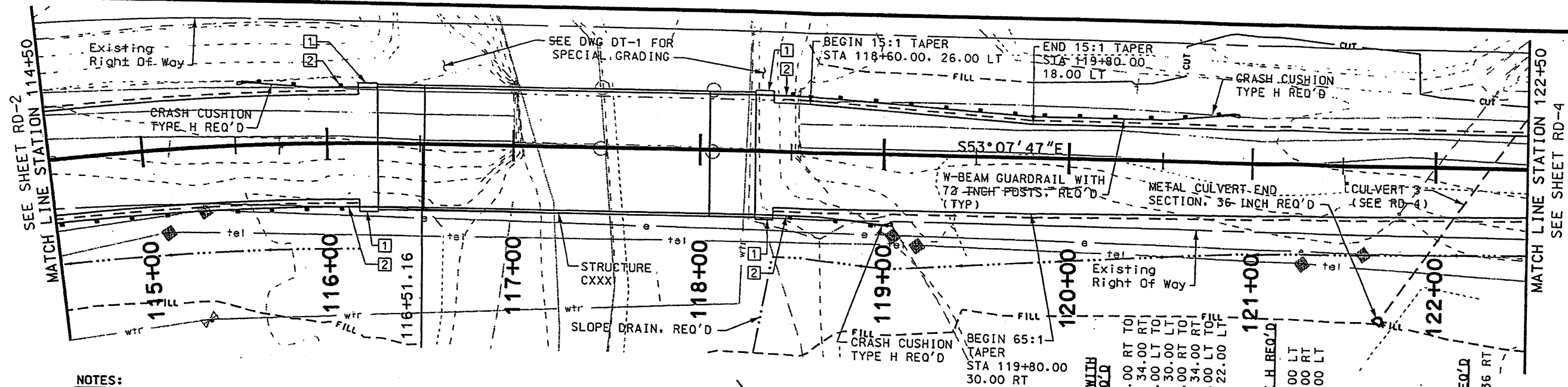
SR-262 OVER MCLEMD CREEK,
 WEST OF ANETH

ROADWAY PLAN AND PROFILE

PROJECT NUMBER
 BRF-0262(6)30

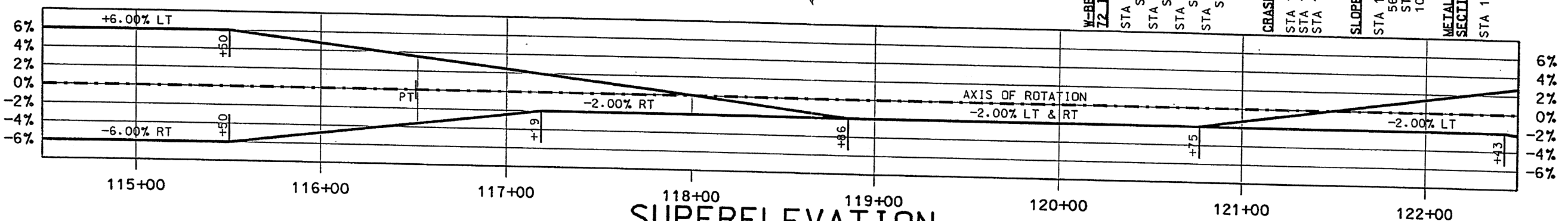
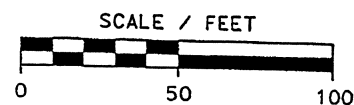
DESIGN	TEH	2-06	CHECK	REJ	4-06	REVIEW
APPROVAL	RECOMM	4/20/06	DATE	DATE	DATE	DATE
TRENT HANSON	PROJECT DESIGN ENGINEER					
ROBERT JACOBS	PROJECT DESIGN ENGINEER					
RECONSTRUCTION ENGINEER						

20-APR-2006 D:\Filer\01\1255.05\Sheet\Files\Roadway\3255-rd-3.dgn

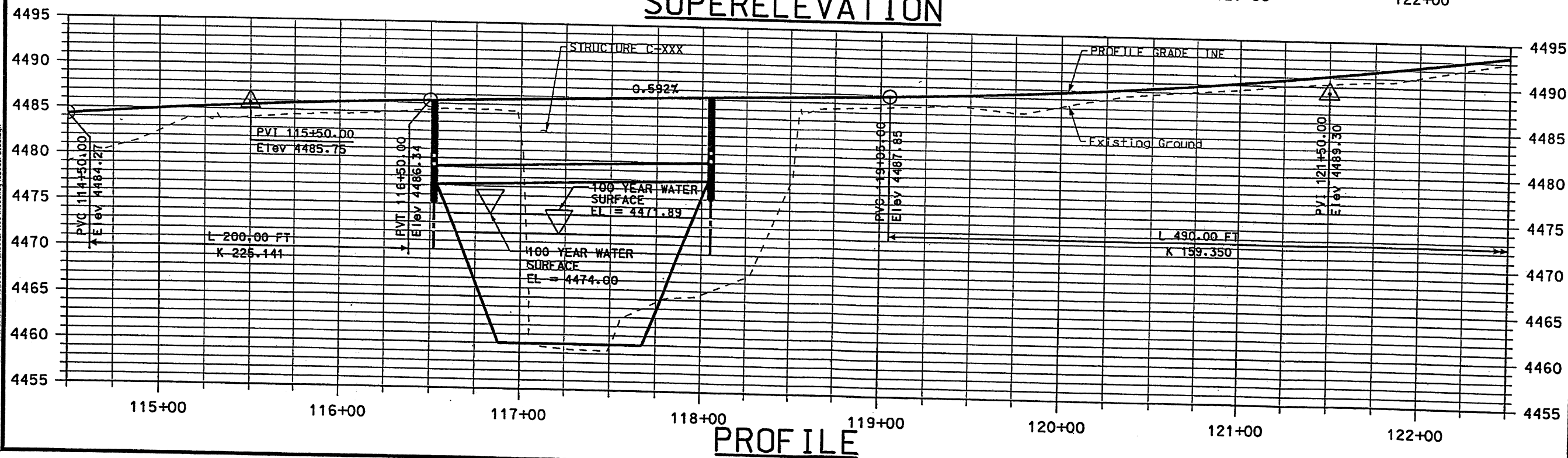


NOTES:

- 1 PRECAST CONSTANT SLOPE TRANSITION SECTION, REQ'D
- 2 W-BEAM GUARDRAIL TRANSITION ELEMENT, REQ'D



SUPERELEVATION



PROFILE

PRELIMINARY
NOT FOR CONSTRUCTION
20-APR-2006

UTAH DEPARTMENT OF TRANSPORTATION
REGION FOUR -- RICHFIELD, UTAH
ROADWAY DESIGN

SR-262 OVER MCELMO CREEK,
WEST OF ANETH

ROADWAY PLAN AND PROFILE

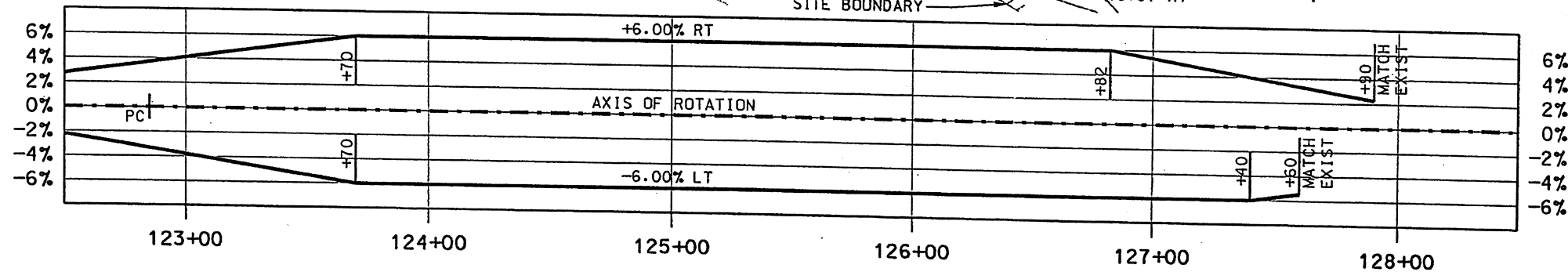
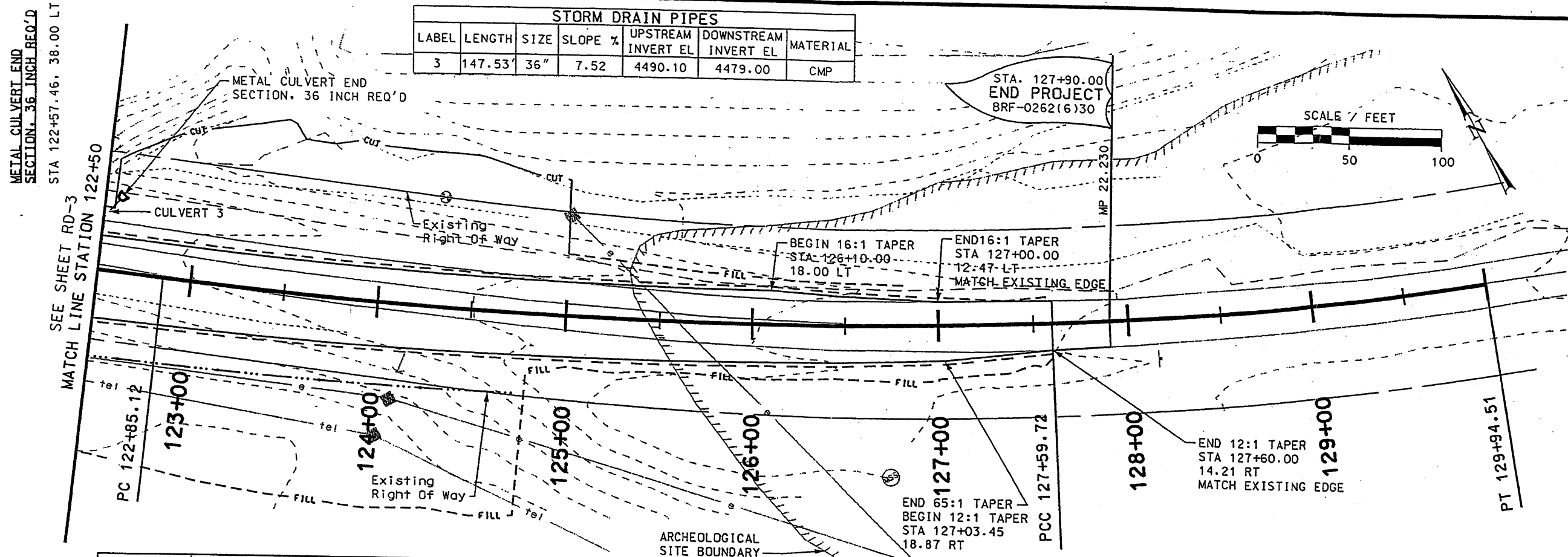
PROJECT NUMBER BRF-0262(6)30

SAN JUAN
COUNTY

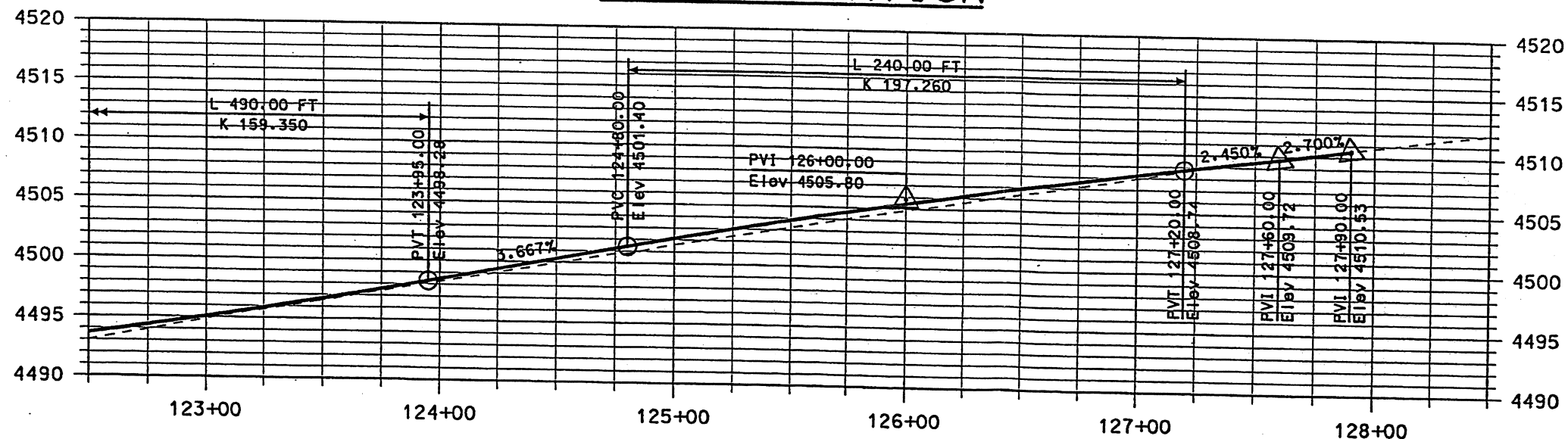
SHEET NO. RD-3

DESIGN	TECH	2-06	CHECK	REJ	4-06	REVIEW
DESIGN	TECH	2-06	CHECK	REJ	4-06	REVIEW
DRAWN	CLD	2-06	CHECK	REJ	4-06	DATE
BY			CHECK			BY

20-APR-2006 D:\Filer\018425\3255.05\Sheet\Files\Roadway\3255.rd.dgn



SUPERELEVATION



PROFILE

PRELIMINARY
NOT FOR CONSTRUCTION
20-APR-2006

UTAH DEPARTMENT OF TRANSPORTATION
REGION FOUR - RICHFIELD, UTAH
ROADWAY DESIGN

DESIGN	CHECK	REVIEW
TEH 2-06	REJ 4-06	DATE
DRW 2-06	REJ 4-06	BY
QUANT.	CHECK	

APPROVAL	DATE	RECOMM.	DATE
TRENT HANSON	4/20/06	PROJECT DESIGN ENGINEER	4/20/06
ROBERT JACOBS	4/20/06	PRECONSTRUCTION ENGINEER	4/20/06

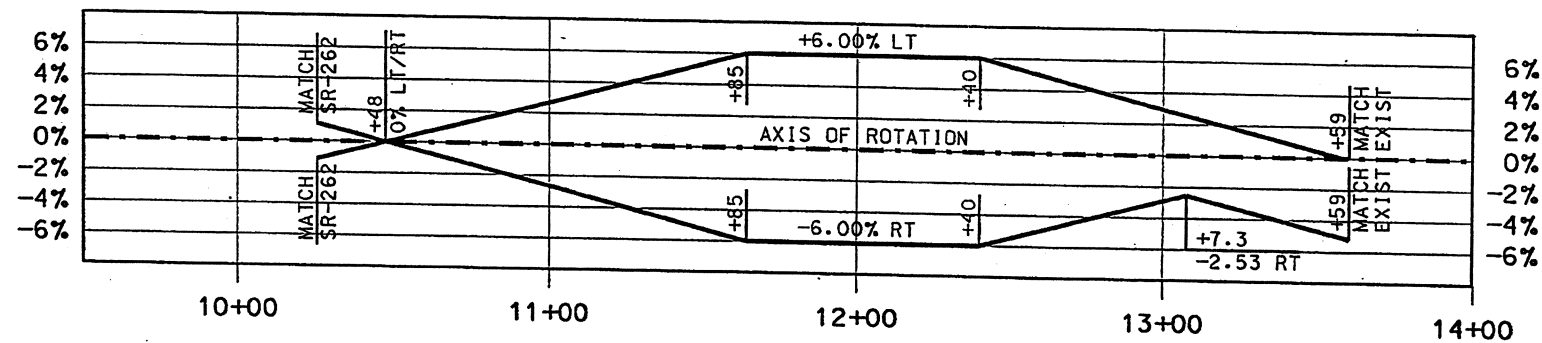
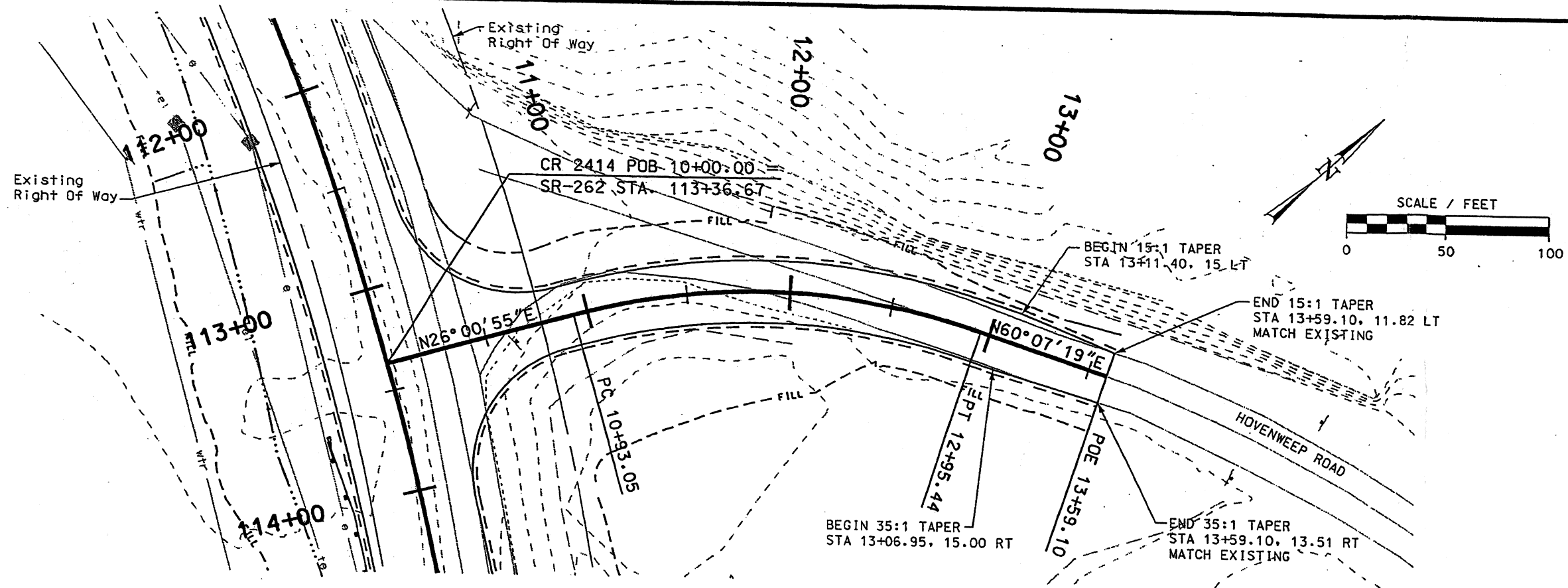
SR-262 OVER MCELMO CREEK,
WEST OF ANETH

ROADWAY PLAN AND PROFILE
PROJECT NUMBER BRF-0262(6)30

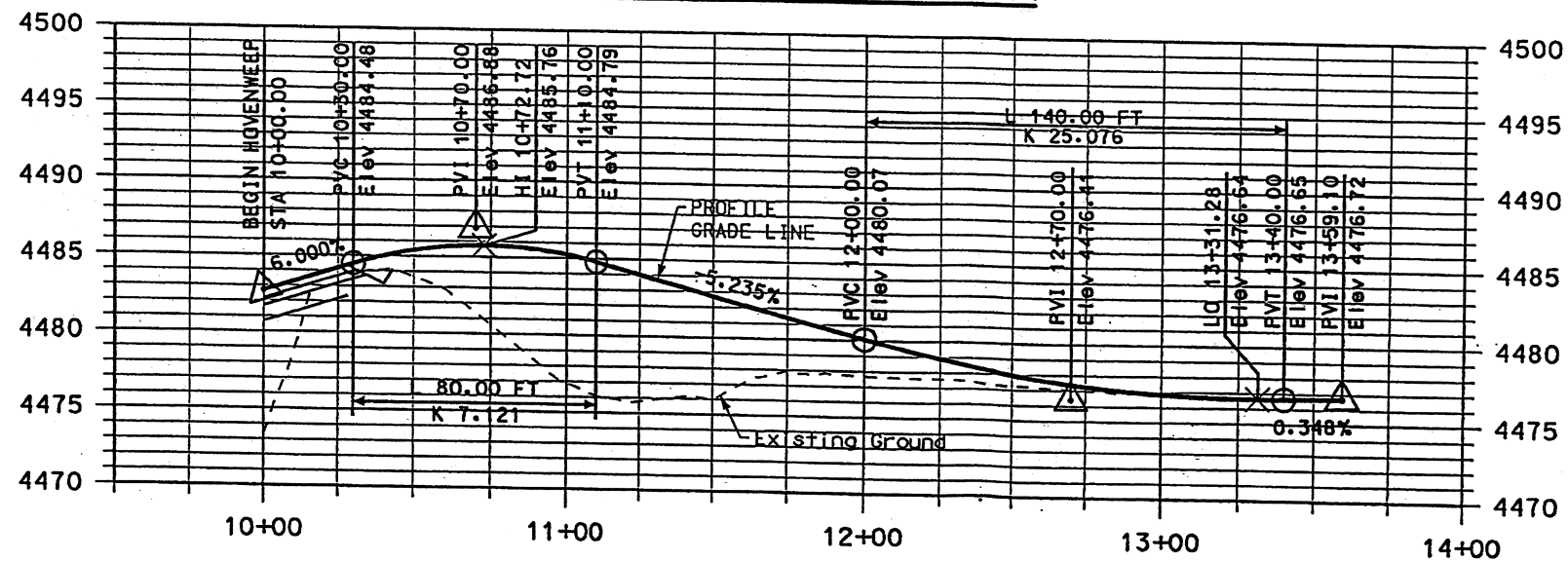
SAN JUAN
COUNTY

SHEET NO. RD-4

DGN File: Q:\18125\3255.05\Sheet\Roadway\3255.r.dwg 28-APR-2006



SUPERELEVATION



PROFILE

PRELIMINARY
NOT FOR CONSTRUCTION

20-APR-2006

UTAH DEPARTMENT OF TRANSPORTATION
REGION FOUR -- RICHFIELD, UTAH
ROADWAY DESIGN

SR-262 OVER McELMO CREEK,
WEST OF ANETH

ROADWAY PLAN AND PROFILE

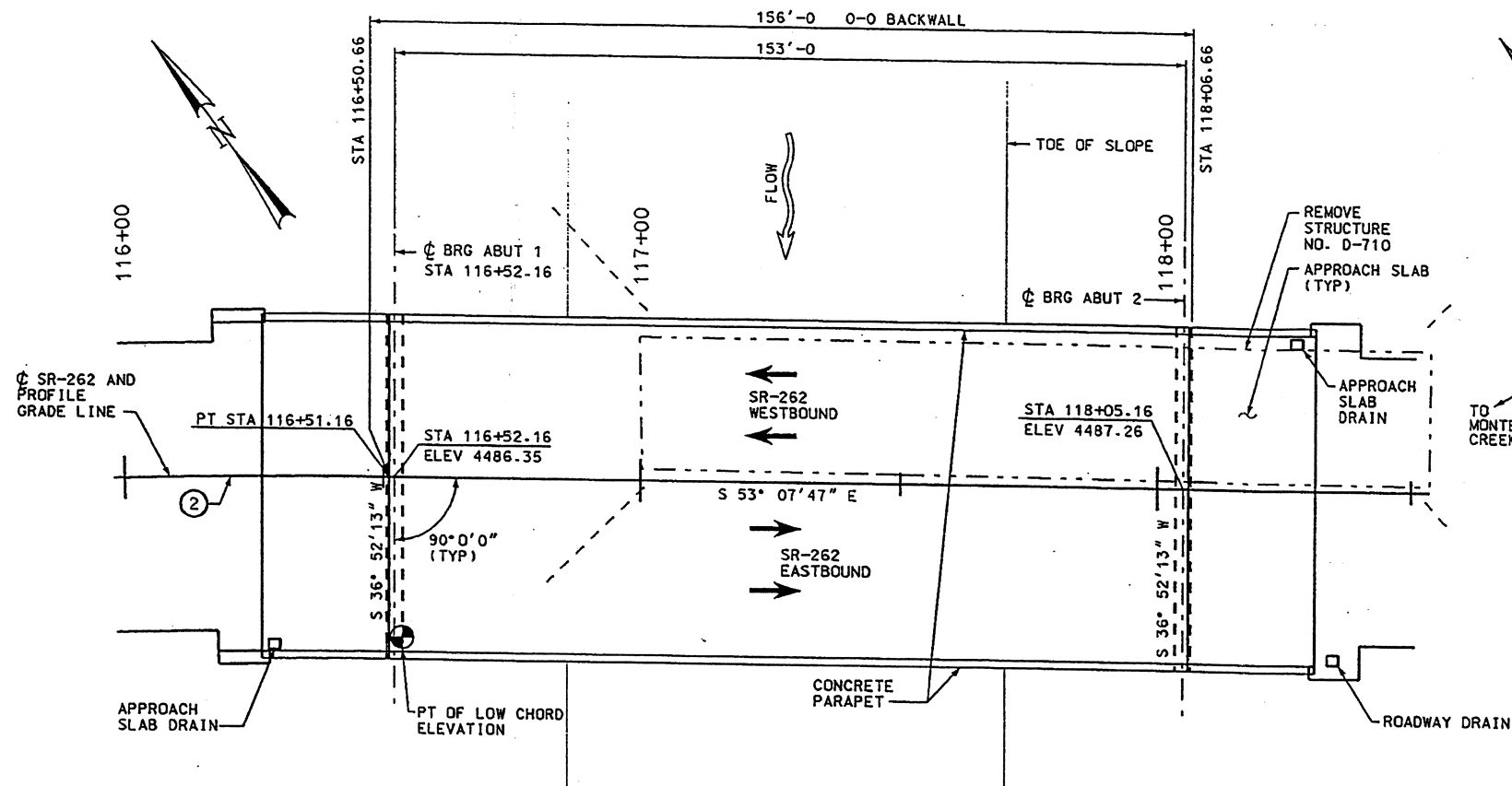
SAN JUAN
COUNTY

SHEET NO. RD-5

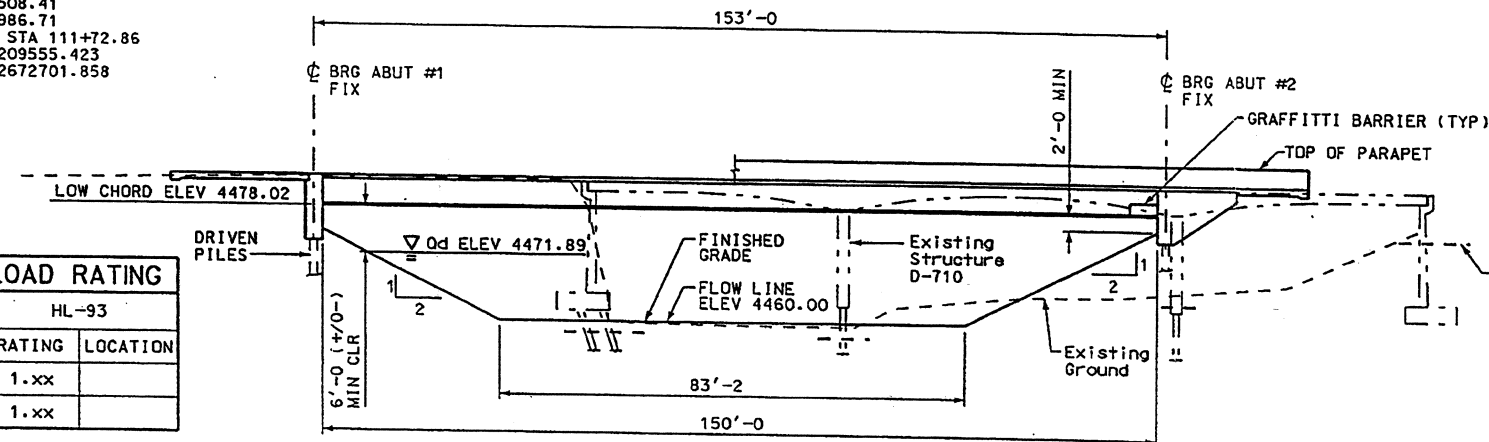
PROJECT NUMBER
BRF-0262(6)30

DESIGN	TECH	2-06	CHECK	REJ	4-06	REVIEW
DESIGN	TECH	2-06	CHECK	REJ	4-06	REVIEW
DRAWN	GLO	2-06	CHECK	REJ	4-06	DATE
QUANT.			CHECK			BY

APPROVAL
RECOMMENDATION
DATE
4/20/06
PROJECT DESIGN ENGINEER
TRENT HANSON
DATE
4/20/06
PRECONSTRUCTION ENGINEER
ROBERT JACOBS



CURVE DATA
 DELTA 34°3'25" RT
 R 1660.00
 T 508.41
 L 986.71
 PI STA 111+72.86
 N 209555.423
 E 2672701.858



BRIDGE LOAD RATING		
	HL-93	
	RATING	LOCATION
INVENTORY	1.xx	
OPERATING	1.xx	

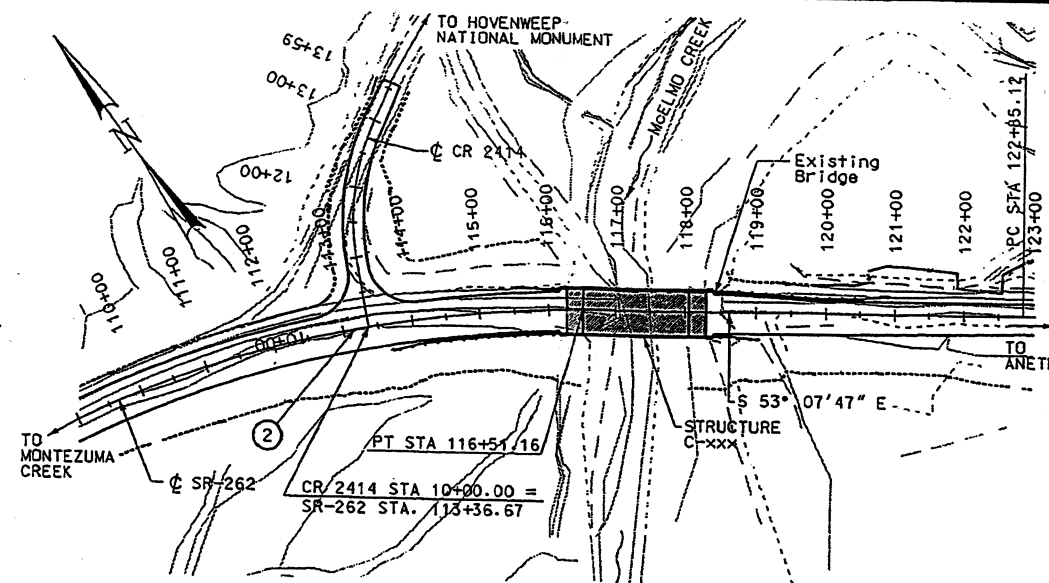
NOTE:
 F DENOTES RATING CONTROLLED BY FLEXURE
 S DENOTES RATING CONTROLLED BY SHEAR
 M_r AT 76.5' = xxxxx.x K-ft
 V_r AT x.x' = xxxxx.x KIPS

GENERAL NOTES

- USE COATED DEFORMED BILLET-STEEL BARS CONFORMING TO AASHTO M284 OR M111 AND M31 GRADE 60 FOR ALL REINFORCING STEEL.
- CONFORM ALL STRUCTURAL STEEL TO AASHTO M 270 GRADE 50W (UNPAINTED) EXCEPT WHERE NOTED OTHERWISE.
- CHAMFER ALL EXPOSED CONCRETE CORNERS 3/4" EXCEPT WHERE NOTED OTHERWISE.
- USE CLASS AA (AE) FOR CAST-IN-PLACE CONCRETE EXCEPT WHERE SPECIFIED OTHERWISE.
- PROVIDE 2 INCH CONCRETE COVER TO REINFORCING STEEL EXCEPT WHERE NOTED OTHERWISE.
- DO NOT SCALE DRAWINGS.
- HORIZONTAL DIMENSIONS ARE PLAN. VERTICAL DIMENSIONS ARE PLUMB.

INDEX OF SHEETS

- | | | |
|------------------------------|-----------------------|----------------------------------|
| 1. SITUATION & LAYOUT 1 | 8. FRAMING PLAN | 15. SCREED ELEVATIONS |
| 2. SITUATION & LAYOUT 2 | 9. GIRDER DETAILS 1 | 16. PARAPET DETAILS |
| 3. SOIL DATA SHEET | 10. GIRDER DETAILS 2 | 17. PARAPET END DETAILS |
| 4. FOUNDATION PLAN | 11. DIAPHRAGM DETAILS | 18. APPROACH SLAB PLAN |
| 5. DRIVEN PILE DETAILS | 12. BEARING DETAILS | 19. APPROACH SLAB DRAIN DETAILS |
| 6. ABUTMENT PLAN & ELEVATION | 13. DECK SLAB PLAN | 20. REINFORCING STEEL SCHEDULE 1 |
| 7. ABUTMENT DETAILS | 14. DECK SECTIONS | 21. REINFORCING STEEL SCHEDULE 2 |



DESIGN DATA

HL-93 LOADING IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 3rd EDITION, 2004 AND 2005 INTERIM SPECIFICATIONS.
 SEISMIC DESIGN IN ACCORDANCE WITH MCEER/ATC49.

INVENTORY AND OPERATING RATINGS ARE IN ACCORDANCE WITH THE GUIDE MANUAL FOR CONDITION EVALUATION AND LOAD RESISTANCE FACTOR RATING (LRFR) OF HIGHWAY BRIDGES.

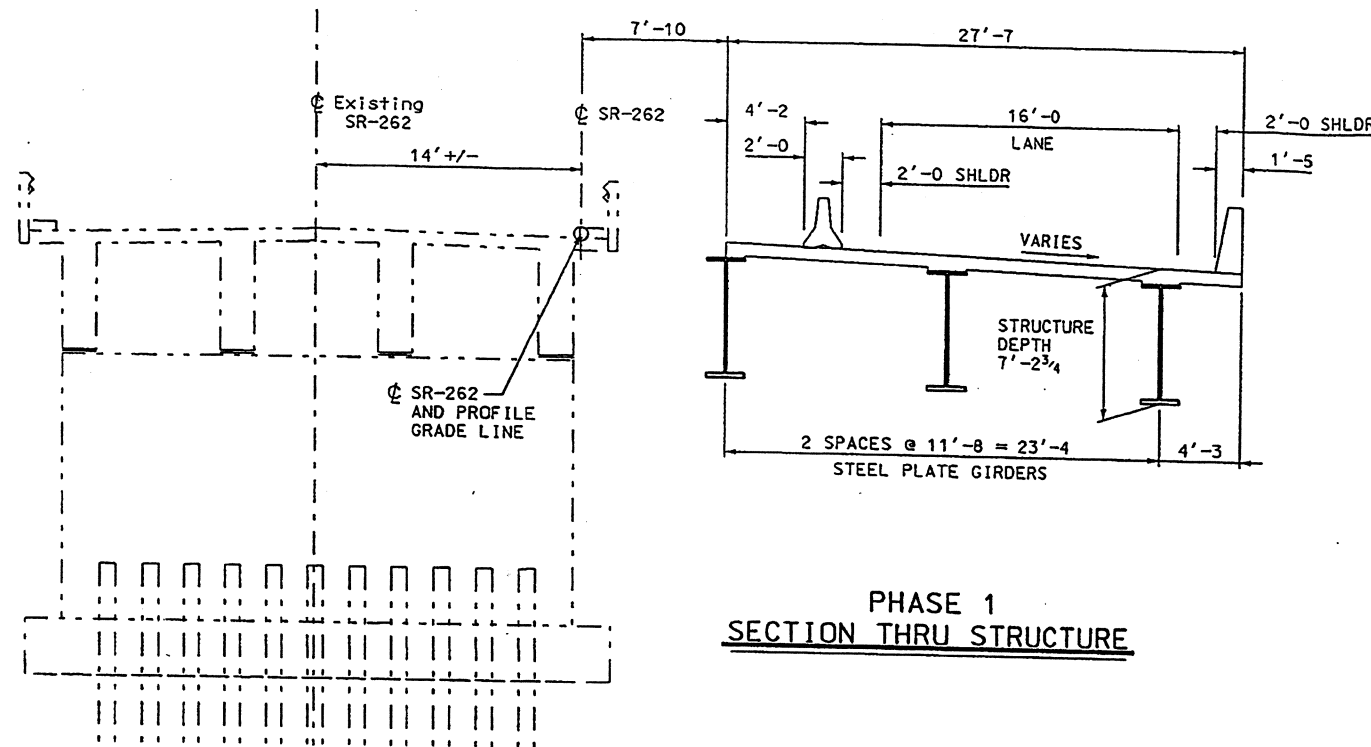
CAST-IN-PLACE CONCRETE: $f'_c = 4000$ PSI; f_y (REINF) = 60 KSI
 STRUCTURAL STEEL: $F_y = 50$ KSI
 WEARING SURFACE: 1/2" CONCRETE; 35 PSF (FUTURE)
 DESIGN SPEED: SR-262 = 65 M.P.H.
 SEISMIC: SEISMIC DESIGN PARAMETERS (500 YR RETURN PERIOD, 10% PE IN 250 YR) $PGA = 0.08g$
 $S_s = \text{MAX CONSIDERED EQ GROUND MOTION AT } 0.2s = 0.18g$
 $S_1 = \text{MAX CONSIDERED EQ GROUND MOTION AT } 1.0s = 0.05g$
 SITE CLASS D, $SHL = 11$, $SDR = 3$

**PRELIMINARY
 NOT FOR CONSTRUCTION**
 21-APR-2006

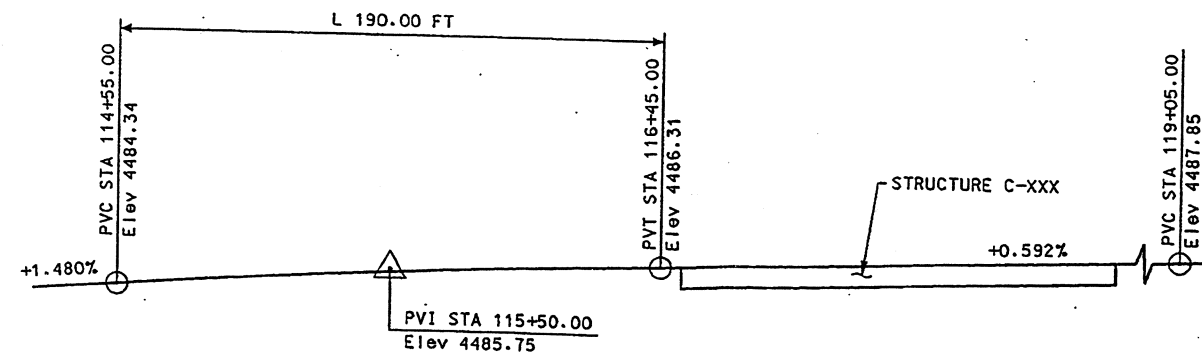
QUANTITIES

ITEM	EST	UNIT	AS CONSTR
PILE DRIVING EQUIPMENT	1	LUMP	
DRIVEN PILES 12 3/4 INCH	XXXX	FEET	
REINFORCING STEEL - COATED	XXX,XXX	LB	
STRUCTURAL CONCRETE (EST QTY XXXX C.Y.)	1	LUMP	
STRUCTURAL STEEL (EST QTY XXX,XXX LBS)	1	LUMP	
DYNAMIC PILE TESTING	1	LUMP	
POLYMER OVERLAY TYPE I	XX	SQ YD	
GRANULAR BACKFILL BORROW (PLAN QUANTITY)	XX	CU YD	

UTAH DEPARTMENT OF TRANSPORTATION STANLEY CONSULTANTS, INC. SALT LAKE CITY, UTAH			
DESIGN	HC 04/06	CHECK	PBB 04/06
DRAWN	GD 04/06	CHECK	PBB 04/06
APPROVAL	DATE	DESIGN ENGINEER	DATE
APPROVED	DATE	DOT BRIDGE ENGINEER	DATE
SR-262, WEST OF ANETH		PROJECT NUMBER BRF-0262(6)30	
SR-262 OVER McELMO CREEK		SITUATION & LAYOUT 1	
SAN JUAN COUNTY		C-XXX	
DRG. NO.		SHT. 1 OF 2	



PHASE 1
SECTION THRU STRUCTURE



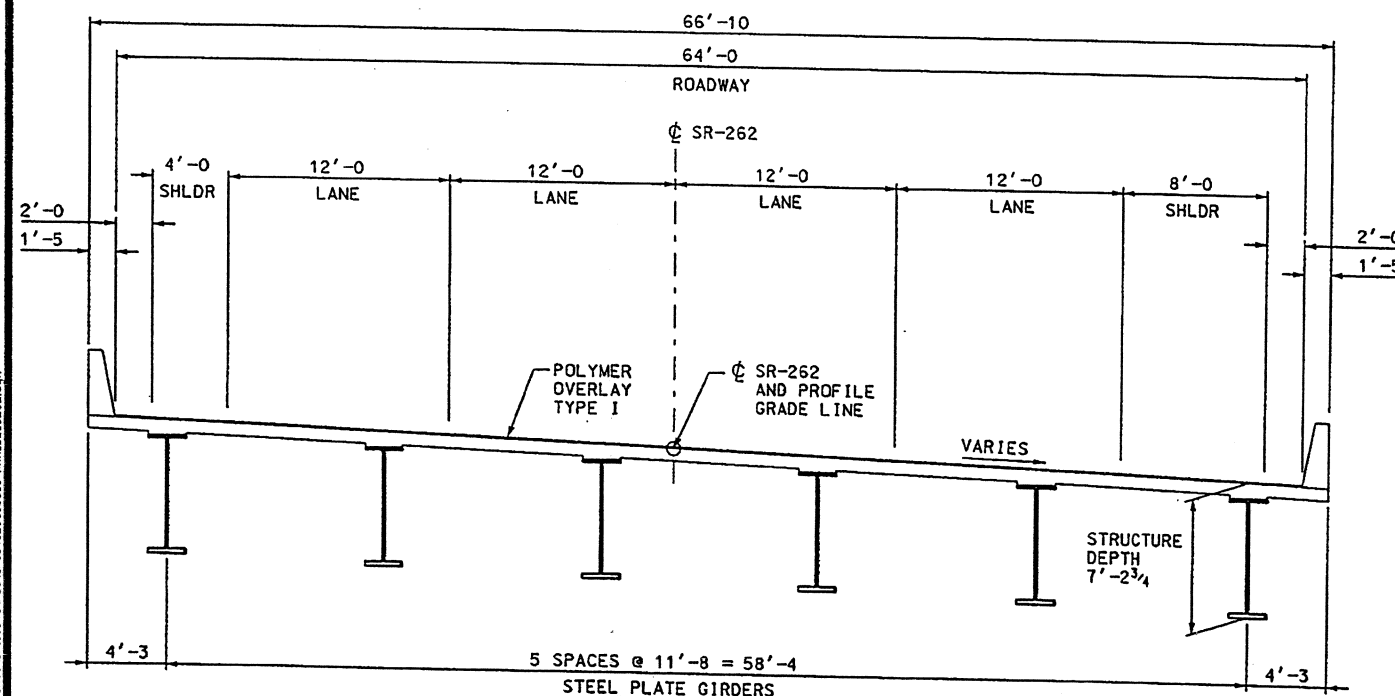
SR-262 PROFILE

PRELIMINARY
NOT FOR CONSTRUCTION
21-APR-2006

SR-262 SUPERELEVATION DATA		
STATION	+/- LEFT	+/- RIGHT
115+50.00	+6.0%	-6.0%
117+19.00	+1.98%	-2.0%
118+02.00	0.0%	-2.0%
118+86.00	-2.0%	-2.0%

HYDRAULIC DATA

1. DRAINAGE AREA 720 MI²
2. DESIGN FREQUENCY 100 YEAR
3. DESIGN DISCHARGE (Qd=Q100) 14,800 FT³/S
4. VELOCITY AT BRIDGE FOR Qd 13.0 FT/S
5. WATER SURFACE ELEV. AT BRIDGE 4471.89
6. NORMAL DEPTH (dn) FOR Qd 11.89 FT



FINAL
TYPICAL SECTION THRU STRUCTURE

UTAH DEPARTMENT OF TRANSPORTATION STANLEY CONSULTANTS, INC. SALT LAKE CITY, UTAH		DESIGN HC 04/06 GD 04/06	CHECK PBB 04/06 PBB 04/06	REVISIONS
APPROVAL RECOMM.	DATE	DESIGN ENGINEER	QUANT.	BY
APPROVED	DATE	DOT BRIDGE ENGINEER		
SR-262, WEST OF ANETH		SITUATION & LAYOUT 2		
SR-262 OVER MCLEMO CREEK		PROJECT NUMBER		
		BRF-0262(6)30		
SAN JUAN COUNTY		C-XXX		
DRG. NO.				
SHT. 2 OF 2				

Appendix B: Public Outreach

McElmo Creek Public Involvement Report Final – October 25, 2005



Public Involvement Report - Final
Bridge Replacement on SR-262 at McElmo Creek, west of Aneth, Utah
Prepared by Intrinsic Consulting, LLC
October 7, 2005

Intrinsic public outreach efforts regarding the environmental study to replace the bridge over McElmo Creek on SR-262, west of Aneth in San Juan County, Utah, included the following components:

- Project reconnaissance – Aug. 16 – 17, 2005
- Develop stakeholder distribution list
- Flier hand delivery – Aug. 16 – 17, 2005
- Aneth Chapter Public Meeting – Sept. 11, 2005
 - Advertised via radio (recorded in English and Navajo), newspaper, news release
 - Solicited comments during meeting
 - Solicited comments via comment forms provided

Project Reconnaissance/Flier Hand Delivery

Intrinsic staff conducted project reconnaissance and flier hand delivery on Tuesday and Wednesday, Aug. 16-17, 2005, as part of the public involvement and outreach plan.

The primary focus of the trip was to meet with Navajo Nation - Aneth Chapter officials one-on-one, to obtain contact information for affected entities and to hand deliver and post a flier that announced the upcoming public meeting. The fliers were posted in places frequented by the public, including government offices, schools and businesses in the area. Additionally, Intrinsic staff explained the focus of this meeting (versus other area projects) to community members while delivering the fliers.

Particular attention was made to visit the communities of Aneth, Montezuma Creek, and Bluff as the areas most affected by the potential project. Contact was also established with other key agencies, such as the National Park Service.

Overall there were no major concerns, and area stakeholders were pleased that the bridge was going to be updated. One individual asked if SR 262 was going to be widened.

The following is a list of locations Intrinsic personally visited and where fliers were posted:

SR 262 - Aneth

- Aneth Chapter House/Administration
- Red Mesa Express Gas/Food Convenience Store
- Aneth Community School
- Hovenweep National Monument (also took a flier to post at Natural Arches)
- Navasew, LLC
- Resolute Natural Resources Aneth Unit Field Office
- San Juan County Fire/Emergency
- Exxon Mobil Aneth Field Office McElmo Creek Unit

SR 262-Montezuma Creek

- Montezuma Creek Post Office
- Red Mesa Express Gas/Food Convenience Store
- Montezuma Creek Community Health Center
- Montezuma Creek Elementary School
- Whitehorse High School
- Church of Jesus Christ of Latter Day Saints – church closed; left flier
- Dine Navajo Church of Christ – closed
- Calvary Baptist Church - closed

Hwy 163/191 - Bluff

- Recapture Lodge
- K&C Convenience Store
- Cottonwood Wash Laundromat
- Twin Rocks Café
- Cottonwood Steakhouse
- Bluff Post Office

Aneth Chapter Recommendations

- To obtain information about landowners and right-of-way issues, contact Belinda Clark at the land office at 435.651.3504
- A Navajo translator is recommended to accompany the SWCA team during its interview process
- The team should work through the Community Services Coordinator, Wilbur Capitan, to discuss the burial site issue with the family
- Other important people to inform/consult:
 - Augustine Norton – Grazing and Land Management Representative for the Chapter – 435.651.3494

- Tom Platero – Navajo Nation Department of Transportation – 928.871.6498
- Rick Bailey – San Juan County Road Department – 435.587.3225

Other Observations

- Sufficient food and beverages will help bring people to the public meeting
- Navajo language announcements are strongly suggested to get the message out to Navajo speakers
- AM radio stations KTNN out of Window Rock and KNDN out of Farmington, as well as FM station KRTZ (98.7) out of Cortez are the preferred radio stations
- The *Navajo Times*, the *Farmington Daily Times*, the *San Juan Record* and the *Cortez Journal* are the preferred newspapers in the affected communities

In addition, fliers were mailed or e-mailed to the following entities:

- County Board of Supervisors
- San Juan County Staff
- Local Sheriff/Police/DPS
- Navajo Nation Police
- Hatch Trading Post
- Red Mesa Chapter
- Teec Nos Pos Chapter

Aneth Chapter Public Meeting

The Aneth Chapter Public Meeting was advertised via posted fliers in area communities; paid newspaper ads (ran Aug. 24 – Sept. 11); and paid radio ads recorded in English and Navajo (ran from Sept. 7 – Sept. 11):

- *Navajo Times*
- *Farmington Daily Times*
- *San Juan Record*
- *Cortez Journal*
- KTNN Radio (out of Window Rock, AZ)
- KNDN Radio (out of Farmington, NM)
- KRTZ Radio (out of Cortez, CO)

In addition, a news release was written by Intrinsic staff and distributed by Myron Lee, UDOT, to an extensive media list comprised of television, radio and newspaper entities generated by Intrinsic.

UDOT, FHWA and Stanley Team representatives attended the Aneth Chapter meeting on Sunday, Sept. 11, to present information about the project and to obtain community input. The team reviewed the project location, project elements, environmental resources to be considered, a typical section and the project schedule.

Thirty-one community members signed the sign-in sheet. One written comment was received the day of the meeting via the Comment Sheets provided. No other comments were received as of the deadline for public comment, Sept. 25, 2005. Public input was minimal, and no input was controversial. In general, all comments written and spoken were positive and appreciative.

Public Comments

Written verbatim:

- I believe this road improvement project is very essential. As a school board member, I feel very fortunate for the project due to school buses traveling on it a lot. Also some buses intersect at the intersection, which is unsafe as of now. Thank you very much – Tully R. Jones, Montezuma Creek, Utah

Spoken during meeting:

- One gentleman spoke for about 10 minutes about how glad he is to see the state of Utah giving something back to his community. However, he also expressed concern that this small project may not be enough. He concluded his comments with "No more promises. Just build it."
- Many comments were in support of the bridge with the additional request to include work on other county and state road sections in the area.
- Many questions arose that were unrelated to this project but related to county road issues. The County Roads representative was on-hand to answer these questions.
- Who is funding the project?
- Concern for livestock in the right-of-way
- Request for Chapter approval upon completion

As of Oct. 7, 2005, no information has been obtained from the Chapter officials regarding the burial site or the family. This effort is ongoing.

Once the project is complete in January, the team will request a Supporting Resolution from the Chapter. As the date gets closer, we will request to be on the agenda at an appropriate Chapter meeting regarding the Resolution request. At least one team member will need to attend the day the Resolution is proposed and accepted.

Wóshdée'!

YOU ARE INVITED!

Bridge Replacement on SR-262 at McElmo Creek

(west of Aneth, Utah)

Public Meeting

Sunday, September 11, 2005 1 p.m. - Aneth Chapter House

The Utah Department of Transportation (UDOT), in coordination with the Federal Highway Administration (FHWA), is seeking input from residents, business owners and other interested persons regarding an environmental study to replace the bridge over McElmo Creek on SR-262, west of Aneth in San Juan County, Utah.

Project elements include:

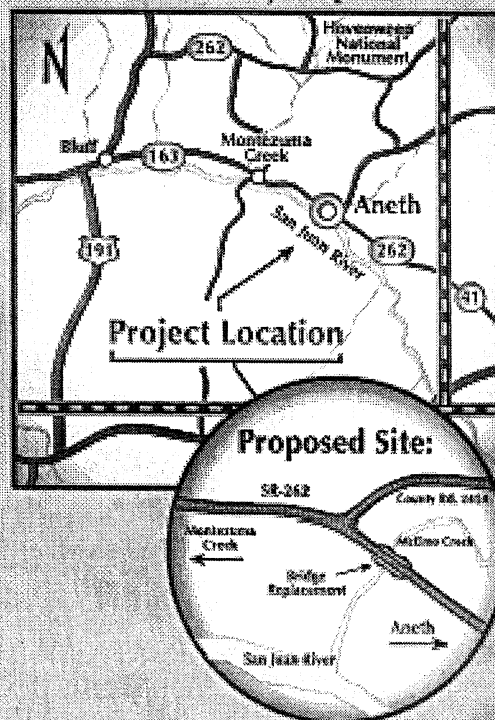
- * Building a new bridge
- * Realigning approximately 2,500 feet of roadway south of the existing bridge
- * Improving Intersection with County Road 2414 by adding right and left turn lanes.

The bridge replacement project is needed because the bridge no longer meets current safety standards. Construction is anticipated to begin in Spring 2006.

Refreshments will be served.

For more information, please call Susan Springer toll free at 1-866-659-0654 or email her at susan@intrinsicinfo.com

Vicinity Map



YOUR PARTICIPATION IS IMPORTANT!

Ahe'hee'

Appendix C: Pertinent Correspondence

- (1) Navajo Air Quality Requirements - July 17, 2005
- (2) Paleontological File Search and Recommendations – August 17, 2005
- (3) Letter to Navajo Nation regarding treatment of remains – July 17, 2006 (two letters)
- (4) Letter to Utah SHPO regarding McElmo Creek project – July 18, 2006
- (5) Letter to HOPI Tribe regarding McElmo Creek project – July 18, 2006
- (6) Letter to Navajo Nation THPO regarding McElmo Creek project – July 17, 2006
- (7) Letter from Navajo Nation regarding treatment of human remains – July 24, 2006 (two letters)
- (8) Letter from Navajo Nation regarding biological evaluation – June 7, 2006
- (9) Email from COE regarding waters of the US – August 25, 2006
- (10) Letter from Navajo Nation regarding concurrence on cultural resources – July 13, 2006



Navajo Nation EPA – Air Quality Control Program

P.O. Box 529
Route 112 North BLDG.# F004-051
Fort Defiance, Arizona 86504
(928) 729-4246
FAX (928) 729-4323

30 September 2005

RECEIVED

OCT 17 2005

Vincent Izzo
McElmo Creek Environmental Manager
HDR Engineering Inc.
1715 S. Reserve Street
Missoula, Montana 59801

HDR ENGINEERING, INC

RE: ACQP-05-050, Bridge Replacement on SR-262 at McElmo Creek West of Aneth, Utah

Dear Mr. Izzo:

In response to a request for consultation for environmental assessment preparation dated 03 August 2005, from HDR Engineering Inc. [1715 S. Reserve Street, Missoula, Montana 59801]. The proposed undertaking is to replace the bridge over McElmo Creek on SR-262, west of Aneth, San Juan County, Utah, Navajo Nation. The proposed undertaking is located at approximately T41S, R24E, Unplatted Section, USGS Topographic Map, 7.5 Minute Quadrangle: *Aneth, San Juan County, Utah*.

The proposed undertaking is located on lands within the jurisdiction of the Navajo Nation in Utah. For the area located within the jurisdiction of the Navajo Nation, this area is designated a Class II area. The area is further designated as "unclassified" for the National Ambient Air Quality Standards (NAAQS) for criteria air pollutants. However, this "unclassified" area can be assumed to be in "attainment" for the NAAQS.

As appropriate, the proposed undertaking should designate traffic, apply water to roads and take other measures to minimize fugitive dust emissions during earth moving activity. The contractor shall ensure that certain measures be taken to minimize any potential impacts during earth moving activities.

If you should have any questions, please contact Navajo Air Quality Control Program staff at (928)729-4246.

Sincerely,

Iris Shirley Begaye
Senior Environmental Specialist
Navajo Air Quality Control Program
Navajo Nation Environmental Protection Agency
P.O. Box 529
Fort Defiance, Arizona



State of Utah
Department of
Natural Resources

MICHAEL R. STYLER
Executive Director

Utah
Geological Survey

RICHARD G. ALLIS, PH.D.
State Geologist
Division Director

JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

August 17, 2005

Krislyn Taite
SWCA Inc. Environmental Consultants
257 East 200 South, Suite 200
Salt Lake City UT 84111

RE: Paleontological File Search and Recommendations for the SR-262, Over
McElmo Creek west of Aneth Project, San Juan County, Utah. UDOT
Project No. BHF-0262(6)30.
U.C.A. 63-73-19 compliance; literature search for paleontological
specimens or sites

Dear Krislyn:

I have conducted a paleontological file search for the SR-262 Project in response to your letter of August 17, 2005. This project qualifies for treatment under the UDOT/UGS executed Memorandum of Understanding.

There are no paleontological localities recorded in our files for this project right-of-way. Quaternary alluvial deposits (Qay) that are exposed in this project area have a low potential for yielding significant fossil localities. Unless fossil localities are discovered as a result of construction activities, this project should have no impact on paleontological resources.

If you have any questions, please call me at (801) 537-3311.

Sincerely,

Martha Hayden
Paleontological Assistant



U.S. Department
Of Transportation
**Federal Highway
Administration**

Utah Division
2520 West 4700 South, Ste. 9A
Salt Lake City, UT 84118-1880

July 17, 2006

Mr. Ronald P. Maldonado, Program Manager
Cultural Resource Compliance Section
Navajo Nation Historic Preservation Department
P.O. Box 4950
Window Rock, AZ 86515

RE: UDOT Project No. BRF-0262(6)30
SR-262 Over McElmo Creek West of Aneth,
San Juan County, Utah
Treatment of Human Remains at the Bridge

Dear Mr. Maldonado:

The Federal Highway Administration (FHWA) and the Utah Department of Transportation (UDOT) propose to replace the bridge across McElmo Creek west of Aneth, in San Juan County, Utah. The existing bridge contains two through lanes and narrow shoulders. The new bridge will be wider than the existing bridge, as it will include two through lanes, an eastbound acceleration lane from County Road 2414, and a westbound deceleration lane for traffic going to County Road 2414.

It has been reported by lineal descendants that there is a traditional wrapped burial of a young female that was placed under a ledge overhang in the 1930s, located on a southwest facing slope north of SR-262 just east of the existing bridge wingwall. During construction of SR-262 in the 1960s, this area was covered by fill such that there is now no slope visible and only a few exposures of bedrock in the area. The precise location of the burial within this area is unknown.

FHWA and UDOT propose to avoid impacts to the area that could contain the burial by designing the road as follows (a sketch of the proposed work at the bridge site is enclosed):

- The SR-262 centerline will be shifted about 14 feet towards the San Juan River to align the northeast side of the new bridge with the northeast edge of the existing bridge. As a result, the new edge of pavement will be approximately 10 feet farther south than the existing edge of pavement, creating more space between the road and the burial location.
- The deceleration lane tapers into the westbound through lane, starting at the east abutment of the new bridge. A concrete barrier will be used from the end of the bridge barrier for a distance of at least 100 feet, about 66 feet from the end of the existing bridge. A transition to guardrail will be used to protect the end of the concrete barrier. Sufficient space will be provided between the end of the guardrail and the cut slope to allow access to the area behind the barriers where the burial site is located.




- A new channel for McElmo Creek will be formed with slopes protected by riprap, which is large diameter rock. The area between the new channel slope and the existing slope will be filled. This embankment along with the protected slope will protect the burial site from erosion due to flooding of McElmo Creek
- In order to protect the burial site from erosion due to roadway runoff, a paved or rock-lined ditch will be constructed along the shoulder and out of the clear zone to convey the water from the cut area east of the burial site to McElmo Creek. The ditch will be modified in the area of the access point to the burial site so vehicles may drive across it

In accordance with the *Navajo Nation Policy for the Protection of Jishchaa'*, the policy of the Navajo Nation is that gravesites, human remains, and funerary items should not be disturbed. As was discussed during the site visit on June 20, 2006, FHWA and UDOT believe that the design measures outlined above will not disturb, or otherwise impact, the burial potentially located near the McElmo Creek Bridge.

FHWA and UDOT are requesting your concurrence that the design measures outlined above will avoid impact to the potential burial location, and that no further measures will be taken to relocate and disinter the remains.

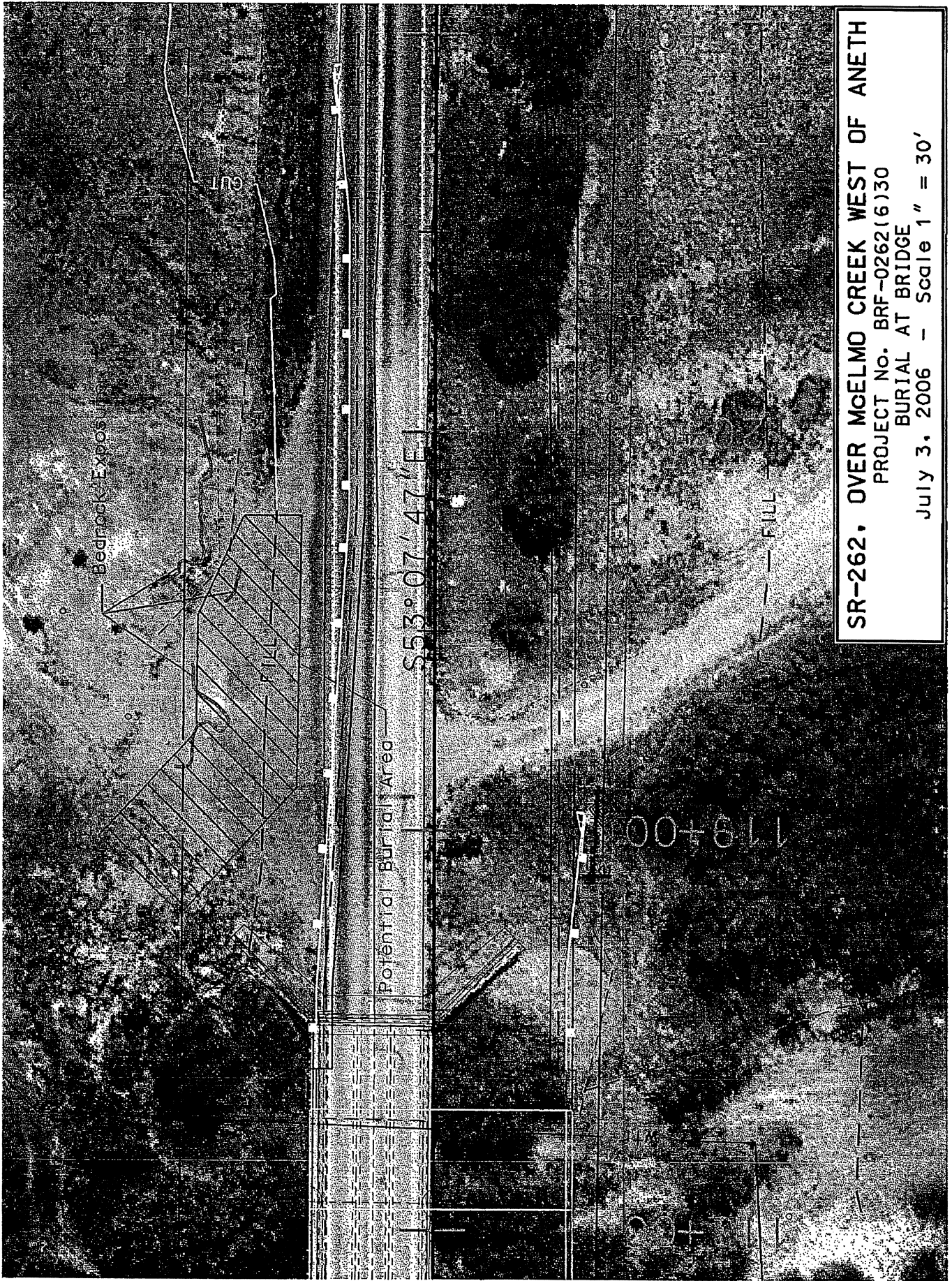
If you have any questions or need additional information, please call me at (801) 963-0078 extension 235, or email me at edward.woolford@dot.gov.

Sincerely,

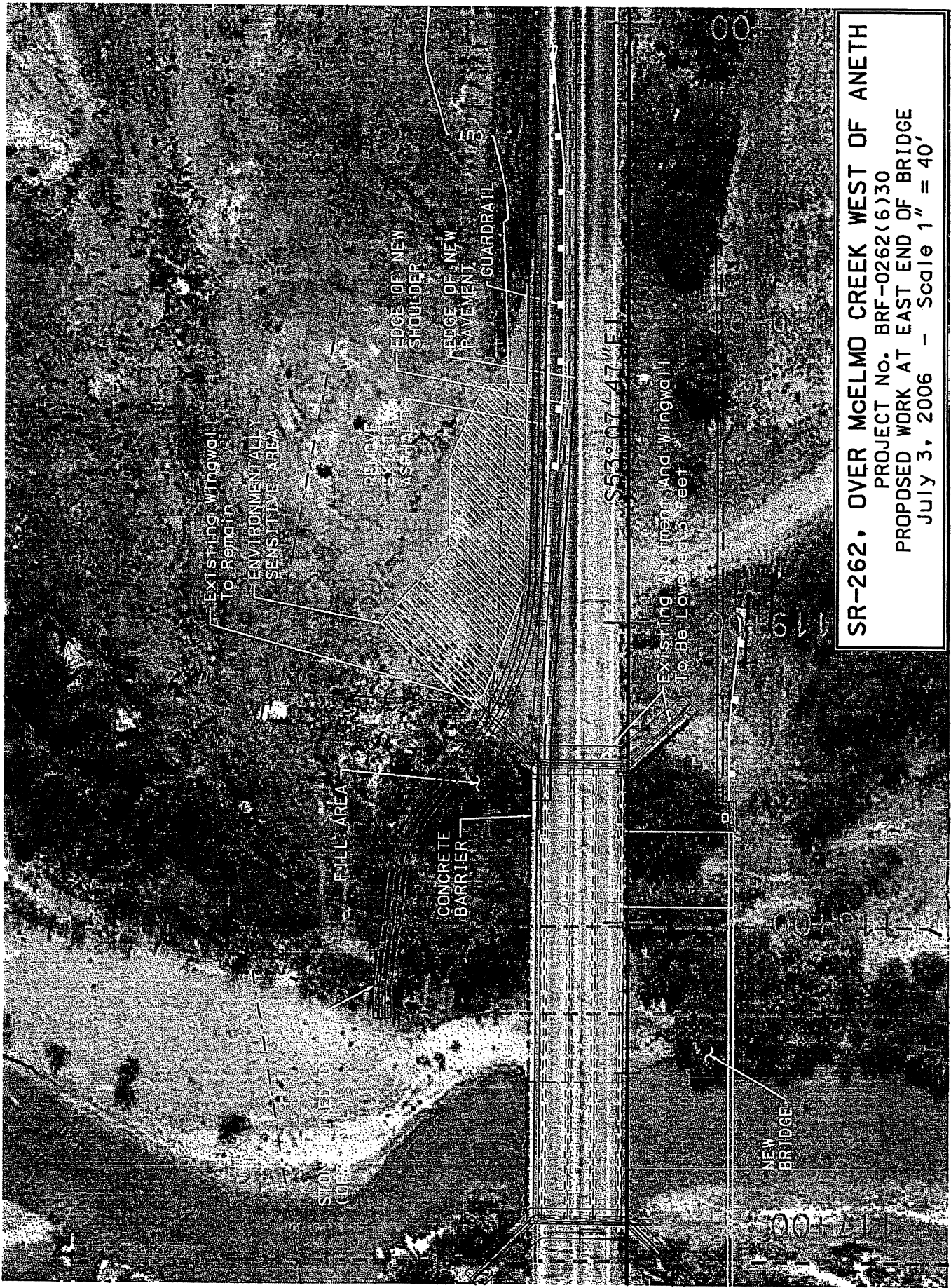

Edward Woolford
Environmental/ROW Specialist

Enclosure

EW:dts



SR-262, OVER McELMO CREEK WEST OF ANETH
PROJECT NO. BRF-0262(6)30
BURIAL AT BRIDGE
July 3, 2006 - Scale 1" = 30'



SR-262, OVER MCELMO CREEK WEST OF ANETH
PROJECT NO. BR-0262(6)30
PROPOSED WORK AT EAST END OF BRIDGE
JULY 3, 2006 - Scale 1" = 40'



U.S. Department
Of Transportation
**Federal Highway
Administration**

Utah Division

2520 West 4700 South, Ste. 9A
Salt Lake City, UT 84118-1880

July 17, 2006

Mr. Ronald P. Maldonado, Program Manager
Cultural Resource Compliance Section
Navajo Nation Historic Preservation Department
P O Box 4950
Window Rock, AZ 86515

RE: UDOT Project No. BRF-0262(6)30
SR-262 Over McElmo Creek West of Aneth,
San Juan County, Utah
Treatment of Human Remains at the Cottonwood Tree

Dear Mr. Maldonado:

The Federal Highway Administration (FHWA) and the Utah Department of Transportation (UDOT) propose to replace the bridge across McElmo Creek west of Aneth, in San Juan County, Utah. The existing bridge contains two through lanes and narrow shoulders. The new bridge will be wider than the existing bridge, as it will include two through lanes, an eastbound acceleration lane from County Road 2414, and a westbound deceleration lane for traffic going to County Road 2414.

It has been reported by lineal descendants that there is a traditional wrapped burial that was placed under a ledge overhang in the 1930s, located on the south side of SR-262 along a south-facing slope near a cottonwood tree above the San Juan River floodplain. The slope is currently covered with soil and loose cobbles, with only a few exposures of bedrock. The precise location of the burial within this area is unknown.

FHWA and UDOT propose to avoid impacts to the area that could contain the burial by designing and constructing the road as follows (a sketch of the proposed work at the site is enclosed):

- The SR-262 centerline will be shifted about 13 feet towards the San Juan River to align the northeast side of the new bridge with the northeast edge of the existing bridge. This portion of roadway is transitioning from the shift at the bridge to the existing alignment as the roadway nears the top of the hill at Aneth.
- The burial site is located on the southwest side of SR-262 in the vicinity of a cottonwood tree located about 450 feet southeast of the existing bridge. The site will be covered with fill material to construct the roadway embankment. In order to help protect the burial site from impacts that would occur with normal construction techniques, the contractor will be required to use a special slope detail. Standard construction procedures for building an embankment onto an



Treatment of Human Remains at the Cottonwood Tree
July 17, 2006
Page Two

existing slope requires cutting into the existing slope several feet to create benches to tie the new embankment into the existing slope (see Bench Slope Stabilization on attached drawing). In the area of the burial site as delineated on the enclosed sketch, the construction technique will be modified as shown by the Alternative Slope Stabilization (see enclosed drawing).

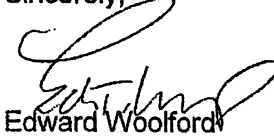
- Cutting into the slope will not be permitted. The embankment will be stabilized by digging a trench at the base of the existing slope to hold the new fill material. The bottom of the trench will be sloped slightly downward towards the existing slope. This trench will be located in the floodplain and will not impact the burial site. It will lock the new material so it does not slide on the existing slope. A sketch of the slope stabilization technique is attached.

In accordance with the *Navajo Nation Policy for the Protection of Jishchaa'*, the policy of the Navajo Nation is that gravesites, human remains, and funerary items should not be disturbed. As was discussed during the site visit on June 20, 2006, FHWA and UDOT believe that the design measures outlined above will not disturb, or otherwise impact, the burial potentially located near the cottonwood tree.

FHWA and UDOT are requesting your concurrence that the design measures outlined above will avoid impact to the potential burial location, and that no further measures will be taken to relocate and disinter the remains.

If you have any questions or need additional information, please call me at (801) 963-0078 extension 235, or email me at edward.woolford@dot.gov.

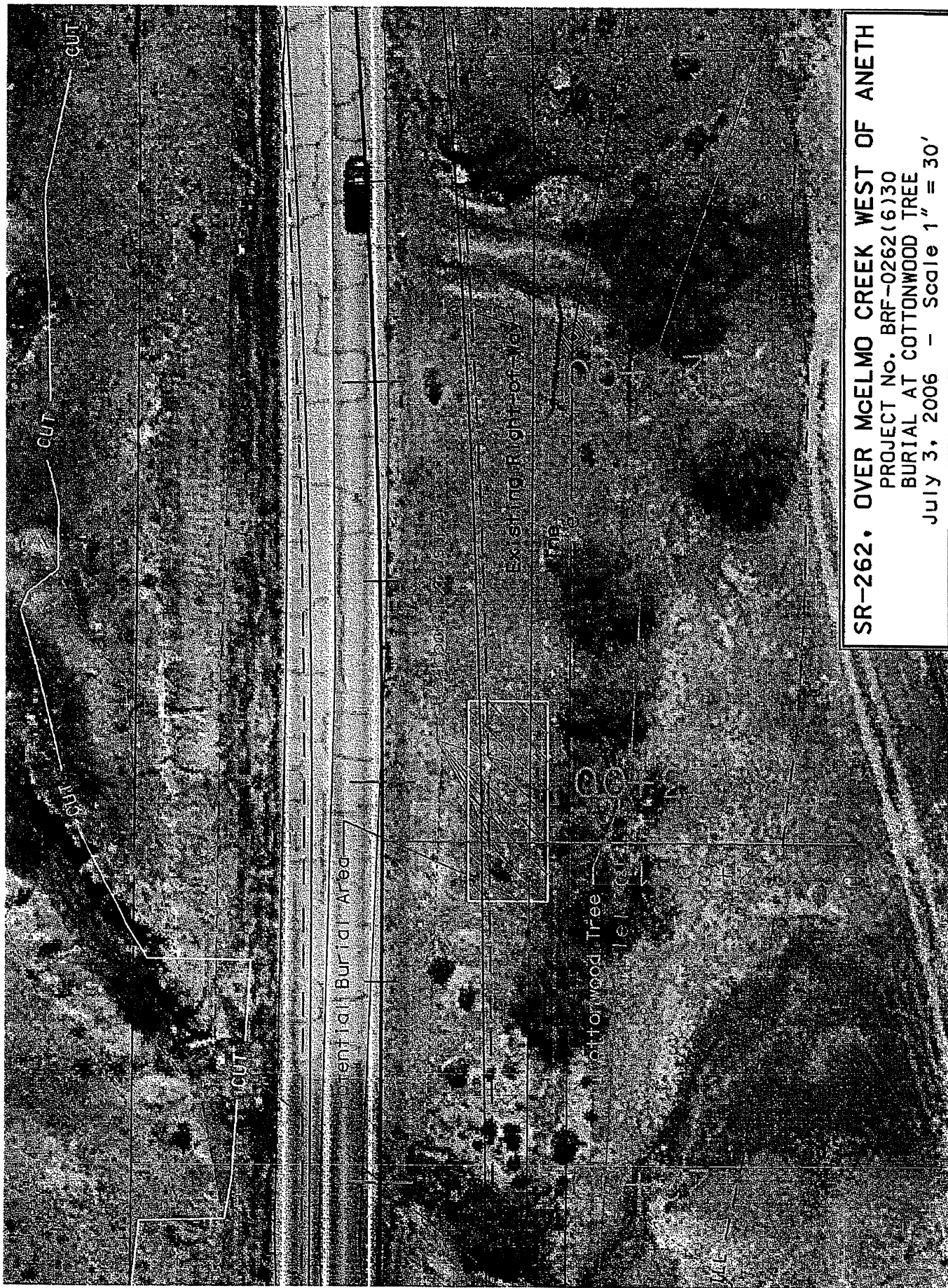
Sincerely,



Edward Woolford
Environmental/ROW Specialist

Enclosure

EW:ds

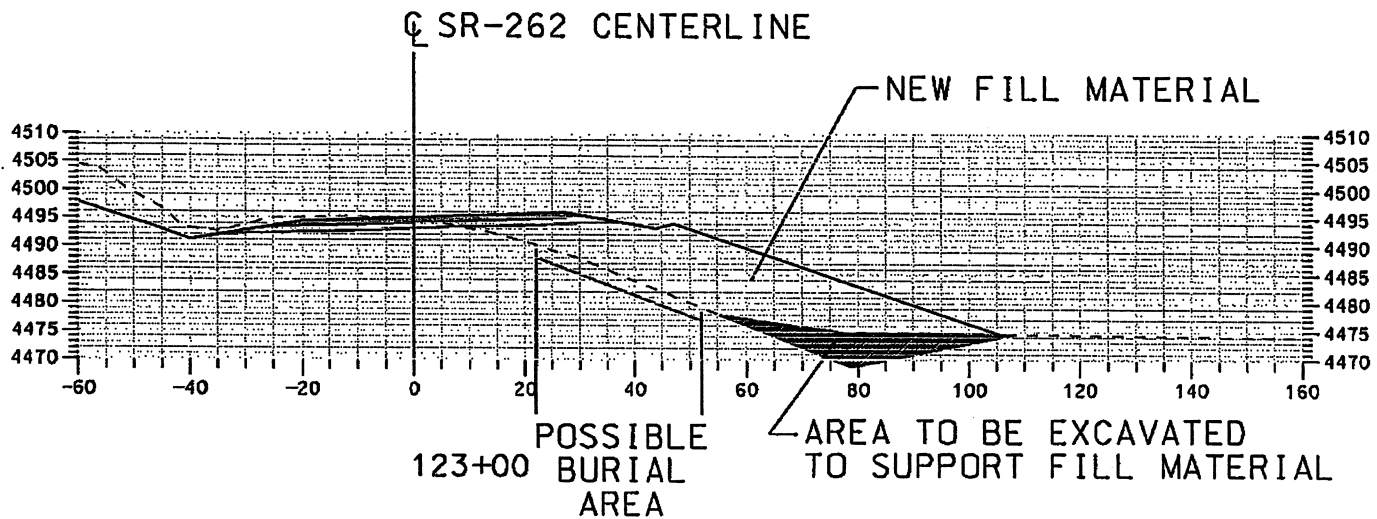


SR-262, OVER McELMO CREEK WEST OF ANETH

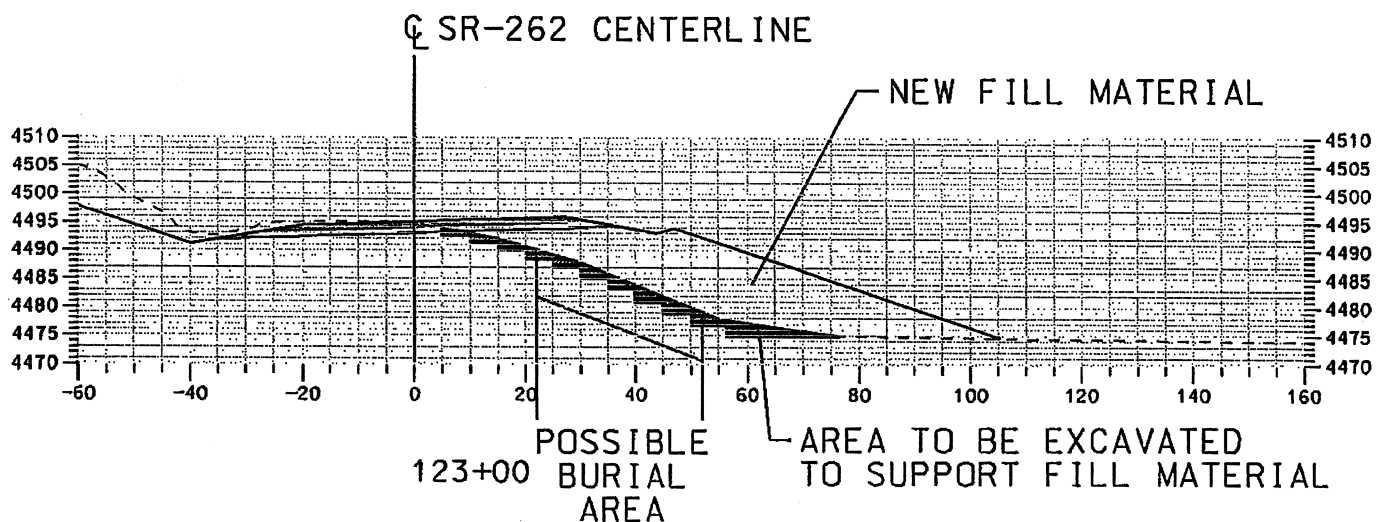
PROJECT NO. BR-0262(6)30

BURIAL AT COTTONWOOD TREE

July 3, 2006 - Scale 1" = 30'



ALTERNATIVE SLOPE STABILIZATION



BENCH SLOPE STABILIZATION

SR-262, OVER McELMO CREEK WEST OF ANETH
 PROJECT No. BRF-0262(6)30
 ALTERNATIVE SLOPE CONSTRUCTION METHOD
 July 3, 2006



State of Utah

JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

JOHN R. NJORD, P.E.
Executive Director

CARLOS M. BRACERAS, P.E.
Deputy Director

July 18, 2006

Dr. Matthew Seddon, Deputy SHPO – Archaeology
Utah Division of State History
300 Rio Grande
Salt Lake City, UT

RE: UDOT Project No. BRF-0262(6)30: SR-262 Over McElmo Creek West of
Aneth, San Juan County, Utah.

Dear Dr. Seddon:

Please find enclosed one copy of the cultural resource survey report and site form for the project referenced above. Also enclosed are UDOT's letter of Determination of Eligibility and Finding of Effect that was submitted to the Navajo Nation Tribal Historic Preservation Officer (THPO), along with copies of letters submitted to the THPO regarding the historic burials.

Although a portion of the archaeological site 42SA21456 is on privately owned land, all of the project APE is considered to be tribal land, as defined in Section 301(14) of the National Historic Preservation Act of 1966, as amended. Therefore, formal consultation under 36 CFR 800 is being conducted with the Navajo Nation Tribal Historic Preservation Officer (THPO). We would, however, appreciate any comments or concerns you may have with the project.

Please do not hesitate to call me at 801-965-4159 or email me at eskiner@utah.gov if you have any questions or need additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Betsy Skinner".

Betsy Skinner
Environmental Manager



State of Utah

JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

JOHN R. NJORD, P.E.
Executive Director

CARLOS M. BRACERAS, P.E.
Deputy Director

July 18, 2006

Mr. Leigh J. Kuwanwisiwma, Director
Hopi Cultural Preservation Office
P.O. Box 123
Kykotsmovi, AZ 86039

RE: UDOT Project No. BRF-0262(6)30: SR-262 Over McElmo Creek West of
Aneth, San Juan County, Utah.

Dear Mr. Kuwanwisiwma:

As per your request of September 16, 2005 to be provided with copies of the cultural resource survey report of the area of potential effect for review and comment, please find enclosed one copy of the report and site form for the project referenced above. Also enclosed are UDOT's letter of Determination of Eligibility and Finding of Effect that was submitted to the Navajo Nation Tribal Historic Preservation Officer (THPO) and to the Utah State Historic Preservation Officer (SHPO), along with copies of letters submitted to the THPO regarding the historic burials.

Please review these documents and provide any comments you may have. A response within 30 days would be appreciated should you have any comments or concerns about this project. Please feel free to call me at 801-965-4159 or email me at eskiner@utah.gov, or call Edward Woolford, FHWA Environmental/ROW Specialist, at 801-963-0078 X235 to answer any questions or provide any additional information.

Sincerely,

A handwritten signature in cursive script, appearing to read "Betsy Skinner".

Betsy Skinner, Ph.D.
Environmental Manager



U.S. Department
Of Transportation
**Federal Highway
Administration**

Utah Division

2520 West 4700 South, Ste. 9A
Salt Lake City, UT 84118-1880

July 17, 2006

Mr. Ronald P. Maldonado, Program Manager
Cultural Resource Compliance Section
Navajo Nation Historic Preservation Department
P.O. Box 4950
Window Rock, AZ 86515

RE: UDOT Project No. BRF-0262(6)30
SR-262 Over McElmo Creek West of Aneth,
San Juan County, Utah

Dear Mr. Maldonado:

The Federal Highway Administration (FHWA) and the Utah Department of Transportation (UDOT) propose to replace the bridge across McElmo Creek west of Aneth, in San Juan County, Utah. The existing bridge contains two through lanes and narrow shoulders. The SR-262 centerline will be shifted about 14 feet south to align the northeast side of the new bridge with the northeast edge of the existing bridge. The new bridge will be wider than the existing bridge, as it will include two through lanes, an eastbound acceleration lane from County Road 2414, and a westbound deceleration lane for traffic going to County Road 2414.

In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, 16 U.S.C. § 470 et seq., Utah Code Annotated (U.C.A.) § 9-8-404, and Section 1021 of the Navajo Nation Cultural Resources Protection Act (CRPA, CMY-19-88), the FHWA, in partnership with the Utah Department of Transportation (UDOT), is taking into account the effects of this undertaking on historic properties, and is affording the Advisory Council on Historic Preservation (Council), the Utah State Historic Preservation Officer (SHPO), and the Navajo Nation Tribal Historic Preservation Officer (THPO) an opportunity to comment on the undertaking. Please find enclosed the cultural resource survey report and site records for your review. Please consider this letter UDOT's Determination of Eligibility and Finding of Effect (DOE-FOE) for this project.

The McElmo Bridge project area of potential effects (APE) was inventoried for cultural resources by SWCA, Environmental Consultants (SWCA) on October 6 and 7, 2005. Redesign of the project required additional survey, which was conducted on March 27 and 28, 2006, and mapping site 42SA21456 which occurred on May 4, 2006. All work was done under Navajo Nation Historic Preservation Department (NNHPD) Cultural Resources Investigation Permit No. C0522E and Utah Antiquities Project No. U-05-ST-07961. SWCA identified one previously recorded archaeological site and two isolates in the project APE. As a result of ethnographic studies performed, two historic burials were also identified in the APE.



Site 42SA21456 was first recorded by the Museum of New Mexico's Laboratory of Anthropology in 1964, when portions of the site were excavated. At that time it was given the site number LA9152. It was rerecorded by Abajo Archaeology in 1990 for the UDOT SR-262 Improvement Project, when it was given the Smithsonian trinomial. The site was described by Abajo as a large, multi-component Anasazi Basketmaker III through Pueblo II multi-structure habitation site, located on the first terrace north of the San Juan River. A total of 18 features were recorded by Abajo. It was noted that all of the features had been damaged to some degree by modern construction-related activity. The features included three potential pit structures, four cists, two unidentified slab and cobble features, and the foundations of a multi-room surface pueblo with associated kiva. Abajo personnel revisited the site in 1992 and noted additional disturbances that had likely destroyed one or more of the features.

SWCA revisited the site in 2005 and 2006. The site was formally mapped using a Sokkia Total Station. Eleven new features, five new concentrations, five new middens, and many new artifacts were identified. The features include two slab-lined hearths, a slab-lined feature, a two-room structure, an oval depression, the foundation of a two-room building, a possible structure, possible room block, a rubble mound, and two rock alignments of unknown function. More than 25,000 artifacts were observed, including ceramics, chipped stone, groundstone, ornaments, and bone. The IMACS site form for the site was updated by SWCA. SWCA noted that most of the features identified by Abajo had been either heavily impacted or completely destroyed since that time, including the multi-room structure. Many of the additional features identified by SWCA have been impacted as well.

Site 42SA21456 was previously determined eligible for listing on the National Register of Historic Places (NRHP). Although the site has been heavily impacted by construction, road maintenance, and parking lot maintenance, SWCA believes the site retains integrity of setting, location, and materials, and agrees with the determination of eligibility. They state, "*Further investigations of the features have the potential to yield additional artifacts, datable materials, and subsistence data that could provide information on the age and function of the features*". FHWA and UDOT disagree that site 42SA21456 retains enough elements of integrity to still be eligible for the NRHP. Although there may be some intact subsurface cultural deposits, they are not considered to contain the data necessary to yield information important in prehistory. This type of site is not unique to the area, nor does the site evince special characteristics. Therefore, FHWA and UDOT have determined that the site is **not eligible** for listing on the NRHP.

Two historic Navajo graves were identified by lineal descendants. The first is a traditional wrapped burial of a young female that was placed under a ledge overhang in the 1920s or 1930's located on a southwest-facing slope north of SR-262, just east of the existing bridge wingwall. During construction of SR-262 in the 1960s, this area was covered by fill such that there is now no slope visible and only a few exposures of bedrock in the area. The precise location of the burial within this area is unknown, although it is thought to be within an 80 ft by 20 ft area. The bridge and roadway in this area have been designed to avoid the burial area, with the roadway shifting south to move farther away from the possible location, and concrete barrier and guardrail used to protect it (see enclosed letter). This grave has been determined **not eligible** for listing on the NRHP under criteria consideration D. As a result of the design measures implemented, there will be no effect to the grave. The grave does merit protection,

Project No BRF-0262(6)30
July 17, 2006
Page Three

however, under the provisions of the American Indian Religious Freedom Act (AIRFA) and under the Navajo Nation Policy for the Protection of Jischaa'.

The second grave is also a traditional wrapped burial that was placed under a ledge overhang in the 1930s, located on the south side of SR-262, along a south-facing slope near a cottonwood tree above the San Juan River floodplain. The slope is currently covered with soil and loose cobbles, with only a few exposures of bedrock. The precise location of the burial within this area is unknown, although it is thought to be within a 45 ft by 20 ft area. The site will be covered with fill material to construct the roadway embankment. In order to help protect the burial site from impacts that would occur with normal construction techniques, the contractor will be required to use a special slope detail (see enclosed letter). This grave has been determined **not eligible** for listing on the NRHP under criteria consideration D. As a result of the special construction techniques, there will be no effect to the grave. The grave does merit protection, however, under the provisions of the American Indian Religious Freedom Act (AIRFA) and under the Navajo Nation Policy for the Protection of Jischaa'.

There is the potential for encountering human remains and other cultural features during construction of the project. The construction will be monitored by a qualified archaeologist. If human remains or other cultural features are found, the procedures outlined in 36 CFR 800.13, UDOT's Discovery Standard Specification 01355, Part 1.10, and Navajo Nation Guidelines for the Treatment of Discovery Situations will be followed.

In summary, FHWA and UDOT find that there will be no historic properties affected as a result of the construction of the McElmo Creek Bridge project.

If you have any questions or need additional information, please call me at (801) 963-0078 extension 235, or email me at edward.woolford@dot.gov

Sincerely,

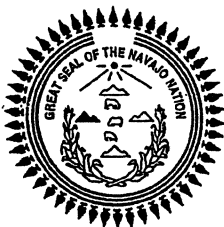


Edward Woolford
Environmental/ROW Specialist

Enclosures (2)

cc: Dr. Matt Seddon, Utah Deputy SHPO-Archaeology
Mr. Leigh Kuwanwisiwma, Director, Hopi Cultural Preservation Office

EW:dts



THE NAVAJO NATION

JOE SHIRLEY, JR.
PRESIDENT

FRANK DAYISH, JR.
VICE-PRESIDENT

July 24, 2006

Edward Woolford
Environmental/ ROW Specialist
U.S Department of Transportation
Federal Highway Administration
Utah Division
2520 South 2700, Ste. 9A
Salt Lake City, UT 84118-1880

RE: *UDOT Project No. BRF-0262(6)30, SR-262 Over McElmo Creek West of Aneth, San Juan County, Utah. Treatment of Human Remains at the Cottonwood Tree.*

Dear Mr. Woolford:

The Navajo Nation Historic Preservation Department, Cultural Resource Compliance Section (CRCS) has received a letter dated July 17, 2004, requesting concurrence for the "*Treatment of Human Remains at the Cottonwood Tree.*" The letter outlines FWH and UDOT's proposal to avoid impacts of the area that may contain the burial. The avoidance measurements were discussed and agreed upon by Ron Maldonado, Program Manager, during a field visit on June 20, 2006. The NNHPD concurs with the design measures outlined in the letter that will avoid impact to the potential burial location and that no further measures will be taken to relocate and disinter the remains.

If there are any questions, please call Ron Maldonado at (928) 871-7132.

Sincerely,



Alan S. Downer, Director

CC: Desk
File



THE NAVAJO NATION

JOE SHIRLEY, JR.
PRESIDENT

FRANK DAYISH, JR.
VICE-PRESIDENT

July 24, 2006

Edward Woolford
Environmental/ ROW Specialist
U.S Department of Transportation
Federal Highway Administration
Utah Division
2520 South 2700, Ste. 9A
Salt Lake City, UT 84118-1880


RE: *UDOT Project No. BRF-0262(6)30, SR-262 Over McElmo Creek West of Aneth, San Juan County, Utah. Treatment of Human Remains at the Bridge.*

Dear Mr. Woolford:

The Navajo Nation Historic Preservation Department, Cultural Resource Compliance Section (CRCS) has received a letter dated July 17, 2004, requesting concurrence for the "*Treatment of Human Remains at the Bridge.*" The letter outlines FWH and UDOT's proposal to avoid impacts of the area that may contain the burial. The avoidance measurements were discussed and agreed upon by Ron Maldonado, Program Manager, during a field visit on June 20, 2006. The NNHPD concurs with the design measures outlined in the letter that will avoid impact to the potential burial location and that no further measures will be taken to relocate and disinter the remains.

If there are any questions, please call Ron Maldonado at (928) 871-7132.

Sincerely,


Alan S. Downer, Director

CC: Desk
File



**THE
NAVAJO
NATION**

PO BOX 9000 • WINDOW ROCK • ARIZONA • 86515

PRESIDENT
JOE **SHIRLEY, JR.**

VICE PRESIDENT
FRANK J. **DAYISH, JR.**

Division of Natural Resources • Fish and Wildlife Department
• PO BOX 1480 • Window Rock • Arizona • 86515
Office: 928/871-6450/6451 Fax: 928/871-7069 Website: www.navajofishandwildlife.org

June 7, 2006

Bill Leibfried, Senior Consultant/Scientist
SWCA Environmental Consultants, Inc.
114 North San Francisco St Suite 100
Flagstaff, Arizona 86001

Dear Mr. Leibfried:

Utah State Department of Transportation (UDOT) is proposing to replace the bridge over the McElmo Creek on State Route (SR) 262 on the Navajo Reservation in San Juan County, Utah. The project activities will consist of constructing a new bridge by removing the existing bridge, realigning approximately 2,500 feet of roadway S of the existing bridge and improving the intersection of SR-262 and County Road (CR) 2414 by adding the right and left turn lanes near the community of Aneth. The existing bridge was constructed in 1963 according to the safety standards at the time but currently it no longer meets the safety specifications for the travel lane width and guardrails. In addition, through time, the bridge has accrued deficiencies due to the scour of the McElmo Creek. McElmo is a perennial stream crossing SR 262 approximately 900 feet upstream of the confluence of the San Juan River. McElmo Creek contributes a base flow of 40-50 cubic feet per second to the San Juan River. The project area has a high level of disturbance and supports the growth of many invasive weed species; scattered trash and broken glass cover the road and livestock grazing directly impacting the stream. The new bridge will be designed to protect the stream banks from erosion by building spur dikes on both sides of the channel to keep from sediments entering the McElmo Creek and changing the chemistry, quality and/or quantity.

After reviewing the proposed construction for the McElmo Creek bridge, we forward the document with *conditional approval* due to the following:

1. According to the biological survey report, there is critical habitat delineated for the Colorado pikeminnow and razorback sucker near the vicinity of the proposed area,

TERMS & CONDITIONS

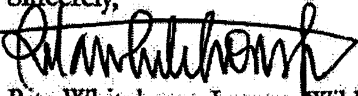
Therefore the Navajo Nation Fish & Wildlife Department recommends the following:

1. To prevent direct impact(s) to the Colorado pikeminnow and the razorback sucker, the existing pier will be removed during the months (November - January) when flows are lowest in the San Juan River and the project will require National Pollutant Discharge Elimination System permit, develop the Storm Water Pollution Prevention Plan and implement the Best Management Practices to prevent the migration of pollutants (including sediment) from construction storm water runoff into the McElmo Creek.

June 7, 2006

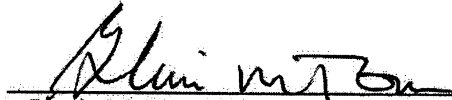
If you agree to the terms and conditions, please sign and return a copy of the enclosed biological resources compliance form or you can provide us comments regarding your proposed project. You may contact Rita at (928) 871-7060 or email: rwhitehorse1@navajofishandwildlife.org for any questions.

Sincerely,



Rita Whitehorse-Larsen, Wildlife Biologist
Natural Heritage Program

CONCURRENCE



Gloria M. Tom, Director
Navajo Nation Fish & Wildlife Department

6/8/06

Date

Cc: Harrilene Yazzie, Bureau of Indian Affairs Navajo Region, Regional NEPA Coordinator
Navajo Environmental Protection Agency, Eugenia Quintana
Navajo Nation Fish & Wildlife Department chrono file

Enc: Compliance Form No. 006-207

BIOLOGICAL RESOURCES COMPLIANCE FORM
NAVAJO NATION DEPARTMENT OF FISH AND WILDLIFE
P.O. BOX 1480, WINDOW ROCK, ARIZONA 86515-1480

COMPLIANCE	<input type="checkbox"/>
CONDITIONAL COMPLIANCE	<input checked="" type="checkbox"/>

It is the Department's opinion the project described below, with applicable conditions, is in compliance with Tribal and Federal laws protecting biological resources including the Navajo Endangered Species and Environmental Policy Codes, U.S. Endangered Species, Migratory Bird Treaty, Eagle Protection and National Environmental Policy Acts. This form does not preclude or replace consultation with the U.S. Fish and Wildlife Service if a Federally-listed species is affected.

PROJECT NAME & NO.: McElmo Bridge Replacement

DESCRIPTION: Utah State Department of Transportation (UDOT) is proposing to replace the bridge over the McElmo Creek on State Route (SR) 262 on the Navajo Reservation in San Juan County, Utah. The project activities will consist of constructing a new bridge by removing the existing bridge, realigning approximately 2,500 feet of roadway S of the existing bridge and improving the intersection of SR-262 and County Road (CR) 2414 by adding the right and left turn lanes near the community of Aneth. The existing bridge was constructed in 1963 according to the safety standards at the time but currently it no longer meets the safety specifications for the travel lane width and guardrails. In addition, through time, the bridge has accrued deficiencies due to the scour of the McElmo Creek. McElmo is a perennial stream crossing SR 262 approximately 900 feet upstream of the confluence of the San Juan River. McElmo Creek contributes a base flow of 40-50 cubic feet per second to the San Juan River. The project area has a high level of disturbance and supports the growth of many invasive weed species; scattered trash and broken glass cover the road and livestock grazing directly impacting the stream. The new bridge will be designed to protect the stream banks from erosion by building spur dikes on both sides of the channel to keep from sediments entering the McElmo Creek and changing the chemistry, quality and/or quantity.

LOCATION: S17, T41S, R25E, Aneth, San Juan County, Utah

REPRESENTATIVE: Suzanne Rhodes, SWCA Environmental Consultants

ACTION AGENCY: SWCA; UDOT

B.R. REPORT TITLE / DATE / PREPARER: Biological Evaluation of the McElmo Creek Bridge Replacement near Aneth, Navajo Nation, San Juan County, Utah/October 2005/SWCA Environmental Consultants

SIGNIFICANT BIOLOGICAL RESOURCES FOUND: KNOWN per letter from Navajo Nation Fish & Wildlife Department - Natural Heritage Program file#05SWCA01 dated August 29, 2005: *Astragalus cremnophylax* var. *hevroni* (Marble Canyon milk-vetch NESL G3)

POTENTIAL: *Aquila chrysaetos* (Golden eagle NESL G3; EPA; MBTA) *Buteo regalis* (Ferruginous hawk NESL G3; MBTA) *Catostomus dicobolus* (Bluehead sucker NESL G4) *Charadrius montanus* (Mountain plover NESL G4; MBTA) *Cinclus mexicanus* (American dipper NESL G3; MBTA) *Cottus bairdi* (Mottled sculpin NESL G4)

NAVAJO BIOLOGICAL RESOURCES COMPLIANCE FORM

Page 2 of 2

Empidonax traillii extimus (Southwestern willow flycatcher NESL G2; ESA endangered; proposed critical habitat)
 Falco peregrinus (Peregrine falcon NESL G4) Gila robusta (Roundtail chub NESL G2) Haliaeetus leucocephalus (Bald eagle, ESA downlisted threatened, EPA, MBTA) Mustela nigripes (Black-footed ferret, NESL G2; ESA endangered)
 Ptychocheilus lucius (Colorado pikeminnow NESL G2; ESA endangered; designated critical habitat) Rana pipiens (Northern leopard frog NESL G2) waterfowl shorebirds Xyrauchen texanus (Razorback sucker NESL G2; ESA endangered; designated critical habitat) Puccinella parishii (Parish's alkali grass NESL G4)

POTENTIAL IMPACTS

TRIBAL ENDANGERED SPECIES (G2 & G3) TAKEN: none

FEDERALLY-LISTED SPECIES AFFECTED: none

OTHER SIGNIFICANT IMPACTS TO BIOLOGICAL RESOURCES: none

AVOIDANCE / MITIGATION MEASURES: No suitable habitat for golden eagle, ferruginous hawk, mountain plover, American dipper, southwestern willow flycatcher, peregrine falcon, bald eagle, black footed ferret, mottled sculpin, roundtail chub, bluehead sucker and northern leopard frog. Critical habitat delineated for the Colorado pikeminnow and razorback sucker near the vicinity of the proposed area. Suitable habitat exists within the proposed area for the Cronquist's milkvetch but known found during the survey due to high level of human and livestock disturbance within the project area.

CONDITIONS OF COMPLIANCE*: To prevent direct impact(s) to the Colorado pikeminnow and the razorback sucker, the existing pier be removed during the months (November - January) when flows are lowest in the San Juan River and the project will require National Pollutant Discharge Elimination System permit, develop the Storm Water Pollution Prevention Plan and implement the Best Management Practices to prevent the migration of pollutants (including sediment) from construction storm water runoff into the McElmo Creek.

FORM PREPARED BY / DATE: Rita Whitehorse-Larsen/June 06, 2006

COPIES TO: (add categories as necessary)

- | | |
|--|---|
| <input type="checkbox"/> Navajo Environmental Protection Agency | <input checked="" type="checkbox"/> BIA Navajo Region, Environmental Services |
| <input type="checkbox"/> U.S. Fish and Wildlife Service, NM Field Office | <input checked="" type="checkbox"/> U.S. Fish and Wildlife Service, UT Field Office |
| <input type="checkbox"/> U.S. Fish and Wildlife Service, AZ Field Office | <input type="checkbox"/> (Other) |

2 NTC § 164 Recommendation:

- ☐ Approval
☒ Conditional Approval (with memo)
☐ Disapproval (with memo)
☐ None (with memo)

Signature

Gloria M. Tom

Gloria M. Tom, Director, Navajo Nation Department of Fish and Wildlife

Date

6/8/06

*I understand and accept the conditions of compliance, and acknowledge that lack of signature may be grounds for the Department not recommending the above described project for approval to the Tribal Decision-maker.

Representative's signature

Date

From: Bill Leibfried [bleibfried@swca.com]
Sent: Friday, August 25, 2006 11:23 AM
To: Izzo, Vincent
Subject: RE: McElmo 404
Vince- This is the response from the Corps Re McElmo.

Bill:

Since the impact to special aquatic sites is less than a tenth of an acre, mitigation in the form of enhancement would be acceptable. However, some monitoring would be required to ensure that the plantings are successful.

The Corps can establish an opinion regarding the LEDPA, however, I would need a detail description of the alternatives along with type of impact associated with each alternative. Impacts should be described as both aquatic and non-aquatic resources.

In a project such as this one, it would be easier to tell you if the project appears to qualify for a nationwide permit. Nationwide permits are already authorized by headquarters and are used to authorize minimal adverse impacts to the aquatic resources.

If you have any questions, please feel free to contact me.

Sincerely

Kara Hellige
US Army Corps of Engineers
Regulatory Branch, Durango Office
Phone: (970)375-9452
Fax: (970)375-9531
www.spk.usace.army.mil/regulatory



THE NAVAJO NATION

JOE SHIRLEY, JR.
PRESIDENT

FRANK DAYISH, JR.
VICE-PRESIDENT

July 13, 2006

Edward Woolford
Environmental/ROW Specialist
US Department of Transportation
Federal Highway Administration
Utah Division
2529 West 4700 South Ste. 9A
Salt Lake City, Utah 84118-1880

RE: *UDOT Project No. BRF-0262(6)30*
SR 262 Over McElmo Creek West of Aneth,
San Juan County, Utah

Dear Mr. Woolford,

The Navajo Nation Historic Preservation Department, Cultural Resource Compliance Section (CRCS) has received for review and concurrence, a letter referencing the UDOT Project No. BRF-0262(6)30, SR 262, Over McElmo Creek West of Aneth, San Juan County, Utah. The project has the potential to impact two historic burials and one archaeological resource. The Navajo Nation Historic Preservation Department has reviewed and concurred with the UDOT's determination and treatment plans for the two burials.

The archaeological resource Utah State Number 42SA21456 had been previously recorded and determined eligible to the National Register of Historic Places. However, FHWA and UDOT have determined that the site is not eligible for listing on the NRHP. Based on this determination, FHWA and UDOT find that there will be no historic properties affected as a result of the construction of the McElmo Creek Bridge project. NNHPD concurs with this finding.

As agent of the Bureau of Indian Affairs (pursuant to Public Law 93-638, archaeological service contract), the NNHPD, with this letter, hereby documents compliance with the Navajo Nation Cultural Resource Protection Act (19 NNC 1001 §201) and consultation with the Navajo Nation Historic Preservation Officer pursuant to Sections 101(a & d), 106(a & d) and 110(a), 2(e) ii of the National Historic Preservation Act.

If there are any questions, please call Ron Maldonado at (928) 871-7132.

Sincerely,



Alan S. Downer, Director

CC: Desk
File

Appendix D: Mitigation Commitments and Permit Requirements

Cultural Resources

Paleontological Resources

Rare, Threatened and Endangered Species

Invasive Species

Water Pollution, Wetlands, Floodplains, and Stream
Encroachment

Air Quality Construction Impacts

Appendix D: Mitigation Commitments and Permit Requirements

D.1 Introduction

This appendix provides a summary of the mitigation measures developed to avoid, minimize, rectify, reduce, or compensate impacts from the bridge replacement project. Funding for the mitigation will be included in the cost of construction for the project with UDOT having final responsibility for implementation. Also included are the necessary permits by resource area.

D.1.1 Cultural Resources

Roadway design avoidance alternatives were developed for the two burial sites within the project APE and are identified below. Final drawings of the avoidance alternatives are included in the project file but because of the sensitive nature of the maps they are not included in this report.

A traditional wrapped burial was placed under a ledge overhang in the 1930s, located on the south side of SR-262 along a south-facing slope above the San Juan River. FHWA and UDOT propose to avoid impacts to the area that contain the burial by designing and constructing the road as follows:

- The SR-262 centerline will be shifted about 13 feet towards the San Juan River to align the northeast side of the new bridge with the northeast edge of the existing bridge. This portion of roadway is transitioning from the shift at the bridge to the existing alignment as the roadway nears the top of the hill at Aneth.
- The burial site is located on the southwest side of SR-262 in the vicinity of a cottonwood tree. The site will be covered with fill material to construct the roadway embankment. In order to help protect the burial site from impacts that would occur with normal construction techniques, the contractor will be required to use a special slope detail. Standard construction procedures for building an embankment onto an existing slope requires cutting into the existing slope several feet to create benches to tie the new embankment into the existing slope. In the area of the burial site, the construction technique will be modified.
- Cutting into the slope will not be permitted. The embankment will be stabilized by digging a trench at the base of the existing slope to hold the new fill material. The bottom of the trench will be sloped slightly

1 downward towards the existing slope. This trench will be located in the
2 floodplain and will not impact the burial site. It will lock the new
3 material so it does not slide on the existing slope.

4 The second burial is a traditional wrapped burial of a young female that was
5 placed under a ledge overhang in the 1930s, located on the southwest facing
6 slope north of SR-262. FHWA and UDOT propose to avoid impacts to the area
7 that contain the burial by designing and constructing the road as follows:

- 8 ▪ The SR-262 centerline will be shifted about 14 feet towards the San Juan
9 River to align the northeast side of the new bridge with the northeast
10 edge of the existing bridge. As a result, the new edge of pavement will
11 be approximately 10 feet farther south than the existing edge of
12 pavement, creating more space between the road and the burial location.
- 13 ▪ The deceleration lane tapers into the westbound through lane, starting at
14 the east abutment of the new bridge. A concrete barrier will be used
15 from the end of the bridge barrier for a distance of at least 100 feet, about
16 66 feet from the end of the existing bridge. A transition to guardrail will
17 be used to protect the end of the concrete barrier. Sufficient space will be
18 provided between the end of the guardrail and the cut slope to allow
19 access to the area behind the barriers where the burial is located.
- 20 ▪ A new channel for McElmo Creek will be formed with slopes protected
21 by riprap, which is larger diameter rock. The area between the new
22 channel slope and the existing slope will be filled. This embankment
23 along with the protected slope will protect the burial site from erosion
24 due to flooding of McElmo Creek.
- 25 ▪ In order to protect the burial site from erosion due to roadway runoff, a
26 paved or rock-lined ditch will be constructed along the shoulder and out
27 of the clear zone to convey the water from the cut area east of the burial
28 site to McElmo Creek. The ditch will be modified in the area of the
29 access point to the burial site so vehicles may drive across it.

30 There is the potential for encountering human remains and other cultural features
31 during project construction. Ground disturbing activities will be monitored by a
32 qualified archaeologist. If human remains or other cultural features are found,
33 the procedures outlined in 36 CFR 800.13, UDOT's Discovery Standard
34 Specification 01355, Part 1.10, and Navajo Nation Guidelines for the Treatment
35 of Discovery Situations will be followed.

36 **D.1.2 Paleontological Resources**

37 No mitigation or permits are required for paleontological resources.

D.1.3 Rare, Threatened and Endangered Species

There is the potential for temporary construction related impacts to the Colorado pikeminnow, razorback sucker, bluehead sucker, and roundtail chub fish species habitat that may occur in the project area. To reduce or eliminate impacts to these species all measures identified in the Storm Water Pollution Prevention Plan (SWPPP) must be implemented (See A.1.6.2 Permit Requirements, *National Pollution Discharge Elimination System*).

In addition, the Navajo Nation Fish & Wildlife Department recommends the following: "The existing pier will be removed during the months (November - January) when flows are the lowest in the San Juan River and the project will require a NPDES permit, SWPPP, and BMPs to prevent the migration of pollutants (including sediment) from construction storm water runoff into McElmo Creek."

D.1.4 Invasive Species

D.1.4.1 Mitigation Commitments

The contractor will be required to follow noxious weed mitigation and control measures identified in UDOT Special Provision Section 02926S, Invasive Weed Control. The Special Provisions for invasive species will be included in the project specifications. Reseeding should be with native plant species to the project site. See the project design regarding seeding schedule.

D.1.5 Water Pollution, Wetlands, Floodplains, and Stream Encroachment

D.1.5.1 Mitigation Commitments

About 0.039 acres of atypical jurisdictional wetlands were identified in the project area. A portion of these wetlands would be impacted by the project design. McElmo Creek is also considered a Waters of the US. In total about 0.0447 acre of atypical wetlands (0.0115 acre) and jurisdictional waters (0.0332 acre) would be impacted. According to the Corps of Engineers the project will require a Nationwide 14 Permit which has been submitted to the Corps. Initial consultation with the Corps of Engineers noted that impacted areas on the creek bank will need to be revegetated with a native seed mix. UDOT has requested that monitoring of the revegetated area not be required. Additional requirements may be applied by the Corps once the 404 permit is granted.

D.1.5.2 Permit Requirements

National Pollution Discharge Elimination System (NPDES). A NPDES permit is required for all construction activities when 1 or more acres of land are expected to undergo excavation and/or grading during construction. Because the project will disturb more than 1 acre a NPDES permit is required. A NPDES permit is required instead of a Utah Pollution Discharge Elimination System permit because the project is on Navajo lands. As part of the NPDES permit a Stormwater Pollution Prevention Plan (SWPPP) would be prepared. A Notice of Intent and Notice of Termination would be submitted to EPA for work on tribal lands.

404 Permit. About 0.0447 acre of atypical wetlands (0.0115 acre) and jurisdictional waters (0.0332 acre) would be impacted. A Nationwide Permit 14 permit has been submitted to the Corps of Engineers for work in McElmo Creek.

D.1.6 Air Quality Construction Impacts

The McElmo bridge replacement project was coordinated with the Navajo Nation EPA-Air Quality Control Program to determine necessary BMPs and permit requirements. Based on consultation (See Appendix C), no permits are required and BMPs required consists of applying water to disturbed (i.e., unpaved parking areas, staging areas, on site stockpiles of debris, dirt, or dusty material) areas and existing road surfaces in the project area to minimize fugitive dust emissions during earth moving activity. Other measures that should be considered include street sweeping at paved access points.

**Biological Evaluation of the
McElmo Creek Bridge Replacement
near Aneth, Navajo Nation,
San Juan County, Utah**

Prepared for

Utah Department of Transportation

Prepared by

SWCA Environmental Consultants

October 2005



**BIOLOGICAL EVALUATION OF THE McELMO CREEK
BRIDGE REPLACEMENT NEAR ANETH, NAVAJO NATION,
SAN JUAN COUNTY, UTAH**

Prepared for

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SWCA Project No. 9968-087

October 20, 2005

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EXECUTIVE SUMMARY

This Biological Evaluation (BE) has been prepared to evaluate the effects of the proposed replacement of the bridge over McElmo Creek on SR-262, west of Aneth in San Juan County, Utah. The project area is located in Section 17, Township 41 South, Range 25 East, (USGS Aneth 7.5' Quadrangle). The project would involve construction of a new bridge, removal of the existing bridge, realignment of approximately 2,500 feet of roadway south of the existing bridge, and improvements to the intersection of SR-262 and County Road 2414 by the addition of right and left turn lanes.

The objectives of this BE are to 1) describe vegetation communities in the project area, and 2) evaluate habitat suitability for special status plant and animal species. Habitat suitability and impacts evaluation for special status species were based on a qualitative comparison between the habitat requirements of each species and habitats found in the project area. The current geographic and elevational range of each species, as well as the proximity of the nearest documented occurrence of each species to the project area, was also taken into consideration.

Fourteen federally listed and candidate species and fifteen species identified in the Navajo Nation Endangered Species lists are addressed in this BE (23 total species due to overlap). No terrestrial species would be affected. Four special status fish species, the Colorado pikeminnow, razorback sucker, bluehead sucker, and roundtail chub may be present at certain times of the year in McElmo Creek. Potential adverse effects to these species can be reduced or eliminated with the implementation of the Storm Water Pollution Prevention Plan (SWPPP) as required by the Environmental Protection Agency (EPA) for this project. With the proper implementation of the SWPPP, the proposed construction of the bridge would not have adverse effects on any tribal or federally listed and candidate species.

INTRODUCTION

PROJECT DESCRIPTION

The proposed project would involve replacing the bridge over McElmo Creek on SR-262 on the Navajo Reservation in San Juan County, Utah. Project activities include constructing a new bridge, removing the existing bridge, realigning approximately 2,500 feet of roadway south of the existing bridge, and improving the intersection of SR-262 and County Road 2414 by the addition of right and left turn lanes near the community of Aneth (Figure 1). The existing bridge, constructed in 1963, was designed to safety standards at that time. Replacement of the bridge is necessary because it no longer meets current standards for travel lane width and guardrails. Also, 42 years after construction, the bridge has developed some deficiencies due to the scour of McElmo Creek.

The Navajo Nation Department of Fish and Wildlife (NNDFW) provided lists of threatened, endangered, and sensitive species with potential to occur in the project area. These lists were used during site reconnaissance to determine any threats to and the presence or absence of individuals or suitable habitat for those species of concern. Qualified biologists with SWCA Environmental Consultants (SWCA) conducted the site reconnaissance on August 18, 2005.

PROJECT LOCATION

The project area is located at an elevation of approximately 4,700 feet in Section 17, Township 41 South, Range 25 East, (USGS Aneth 7.5' Quadrangle), San Juan County, Utah (see Figure 1). SR-262 crosses McElmo Creek approximately 900 feet upstream of the confluence with the San Juan River. McElmo Creek is a perennial stream that contributes a base flow of 40-50 cubic feet per second (cfs) to the San Juan River. This part of Utah lies within the sandstones and mudstones of the Morrison Formation, deposited during the Jurassic period. Soils are classified as Badland types, permeability is slow, runoff is high, and soils are very shallow (USDA 1980). At an elevation of 4,700 feet, it is a part of the Great Basin Desertscrub community (Turner 1994). This community is characterized as a “cold desert”, with cold, harsh winters; low precipitation scattered throughout the year; and great extremes in both daily and seasonal temperatures (Turner 1994).

Vegetation around Mc Elmo Bridge is comprised of low growing, widely spaced woody shrubs and bunchgrasses. The project area has a high level of disturbance and supports the growth of many invasive weed species. In addition, the roadsides are covered with scattered trash and broken glass. Cattle have trampled the vegetation and impacted the stream. Along McElmo Creek, overstory vegetation consists of tamarisk (*Tamarix chinensis*) and Russian olive (*Elaeagnus angustifolia*), underneath grows sweet clover (*Melilotus alba*), horseweed (*Conyza canadensis*), cocklebur (*Xanthium strumarium*), and rabbitsfoot grass (*Polypogon monspeliensis*). The upland vegetation is dominated by snakeweed (*Gutierrezia sarothrae*) greasewood (*Sarcobatus vermiculatus*), halogeton (*Halogeton glomeratus*), and various bunchgrasses, both native and non-native. Table 1 presents a complete list of plants observed at the project site.

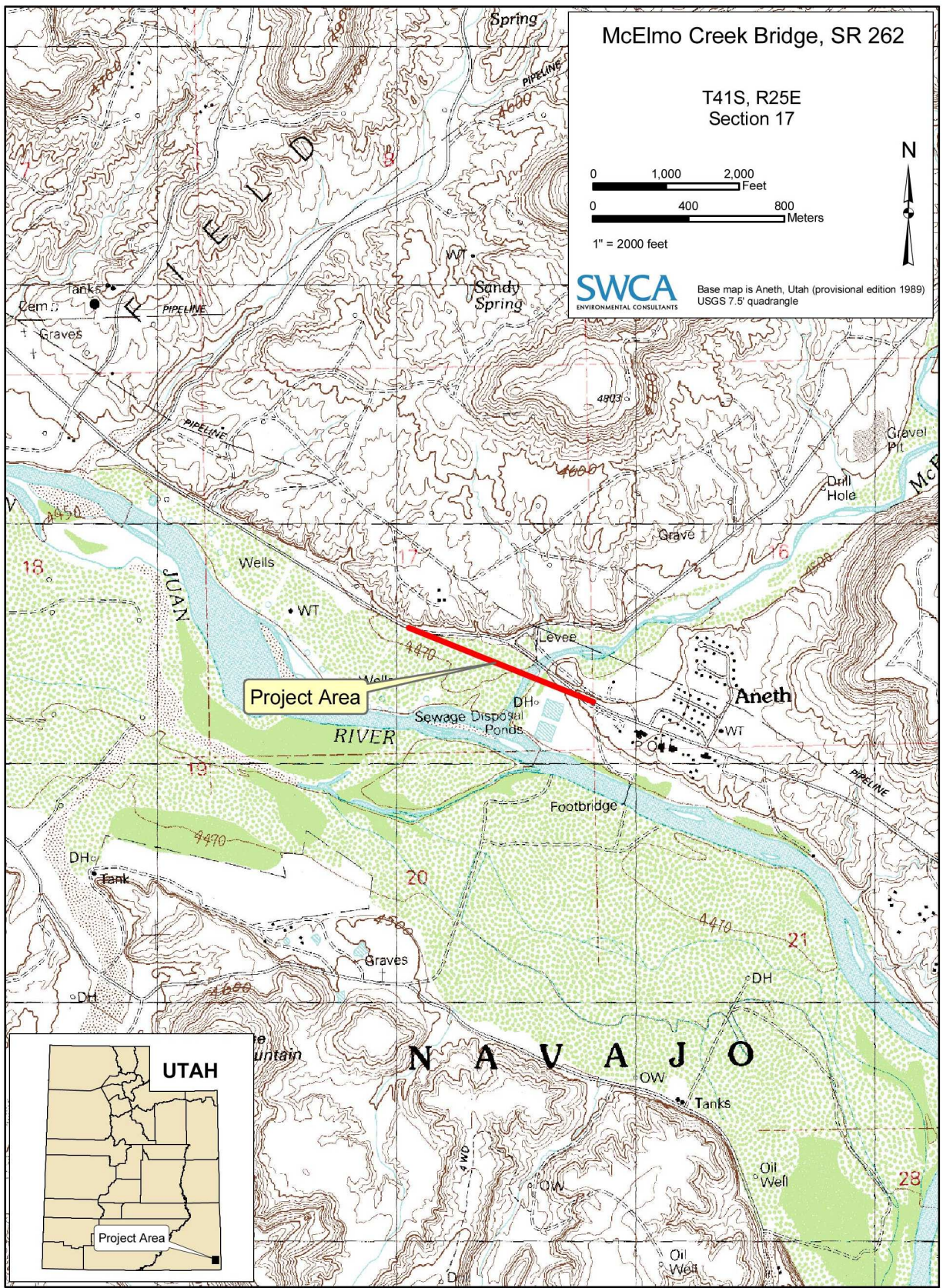


Figure 1. General location of the project area.

Table 1. Common Plant Species Observed during Site Reconnaissance

Common Name	Scientific Name
camelthorn	<i>Alhagi maurorum</i>
trailing four-o'clock	<i>Allionia incarnata</i>
ragweed	<i>Ambrosia</i> sp.
three-awn grass	<i>Aristida</i> sp.
shadscale	<i>Atriplex confertifolia</i>
black grama	<i>Bouteloua eriopoda</i>
red brome	<i>Bromus rubens</i>
cheatgrass	<i>Bromus tectorum</i>
Russian knapweed	<i>Centaurea repens</i>
rattlesnake weed	<i>Chamaesyce</i> sp.
rabbitbrush	<i>Chrysothamnus nauseosus</i>
field bindweed	<i>Convolvulus arvensis</i>
horseweed	<i>Conyza canadensis</i>
bermuda grass	<i>Cynodon dactylon</i>
Russian olive	<i>Elaeagnus angustifolia</i>
jointfir	<i>Ephedra</i> sp.
buckwheat	<i>Eriogonum inflatum</i>
fluff grass	<i>Erioneuron pulchellum</i>
snakeweed	<i>Gutierrezia sarothrae</i>
halogeton	<i>Halogeton glomeratus</i>
goldenbush	<i>Isoscoma</i> sp.
white sweet clover	<i>Melilotus alba</i>
blazingstar	<i>Mentzelia</i> sp.
prickly pear	<i>Opuntia</i> sp.
plantain	<i>Plantago patagonia</i>
galleta	<i>Pleuraphis jamesii</i>
rabbitsfoot grass	<i>Polypogon monspeliensis</i>
cottonwood	<i>Populus fremontii</i>
little hogweed	<i>Portulaca oleracea</i>
greasewood	<i>Sarcobatus vermiculatus</i>
Russian thistle	<i>Salsola kali</i>
silverleaf nightshade	<i>Solanum elaeagnifolium</i>
globemallow	<i>Sphaeralcea</i> sp.
dropseed	<i>Sporobolus cryptandrus</i>
tamarisk	<i>Tamarix chinensis</i>
puncture vine	<i>Tribulus terrestris</i>
cocklebur	<i>Xanthium strumarium</i>
narrowleaf yucca	<i>Yucca angustissima</i>

SPECIAL STATUS SPECIES

Navajo Nation Department of Fish and Wildlife (NNDFW) provided the lists for Navajo endangered species; federally listed threatened, endangered, proposed, and candidate species; and species listed under the Migratory Bird Treaty Act, and Eagle Protection Act. Species name (common and scientific), status, known habitat, and potential for species habitat are listed in Table 2. Habitat descriptions for Navajo Nation endangered species were obtained from the NNDFW, Navajo Natural Heritage Program (Mikesic et al. 2005). Habitat descriptions for federally listed threatened, endangered, proposed, and candidate species were obtained from the U.S. Fish and Wildlife Service (USFWS 2005) and the Utah Division of Wildlife Resources (UDWR 2005a) websites.

Table 2. Special Status Species with the Potential to Occur within or near the McElmo Creek Bridge Project Area

Common Name	Scientific Name	Status	Habitat	Likelihood of Occurrence in Project Area
golden eagle	<i>Aquila chrysaetos</i>	NESL Group 3; MBTA; EPA	Nest on steep cliffs, typically >30m although lower sites infrequently used. Foraging habitat includes desert grasslands or desertscrub that provide primary prey of cottontail and jackrabbits.	This species may occur in or near the project area.
ferruginous hawk	<i>Buteo regalis</i>	NESL Group 3; MBTA	Nest in badlands, flat or rolling desert grasslands, and desertscrub. Forage on populations of cottontail, jackrabbits, prairie dogs, ground squirrels, and gophers.	This species may occur in or near the project area.
peregrine falcon	<i>Falco peregrinus</i>	NESL Group 4; MBTA	Steep, sheer cliffs overlooking woodlands, riparian areas or other habitats supporting avian prey species in abundance.	This species may occur in or near the project area
bald eagle	<i>Haliaeetus leucocephalus</i>	ESA Threatened; MBTA; EPA	Large trees or cliffs near water (reservoirs, rivers, and streams) with abundant prey.	This species may occur in or near the project area.
whooping crane	<i>Grus americana</i>	ESA Experimental Nonessential, MBTA	Nest along marshes, bogs, and shallow lakes.	Habitat for this species does not occur within the project area.
Mexican spotted owl	<i>Strix occidentalis lucida</i>	ESA Threatened	Canyons and dense forests above 4,100 feet.	Habitat for this species does not occur within the project area.
southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	NESL Group 2; ESA Endangered; MBTA	Cottonwood/willow and tamarisk vegetation communities along rivers and streams.	A breeding pair is located near Bluff, Utah. This species may occur in or near the project area.

Table 2. Special Status Species with the Potential to Occur within or near the McElmo Creek Bridge Project Area, continued

Common Name	Scientific Name	Status	Habitat	Likelihood of Occurrence in Project Area
yellow-billed cuckoo	<i>Coccyzus americanus</i>	ESA Candidate; MBTA	Streamside cottonwood, willow grove, and large mesquite bosques for migration and breeding preferred.	Habitat for this species does not occur within the project area. No known populations are present in the project area.
Gunnison sage-grouse	<i>Centrocercus minimus</i>	ESA Candidate	Large expanses of sage with a diversity of grasses and forbs and healthy riparian ecosystems. The Gunnison sage-grouse is dependent on sagebrush for forage.	Habitat for this species does not occur within the project area.
mountain plover	<i>Charadrius montanus</i>	NESL Group 4; ESA Proposed threatened; MBTA	Nests in flat slightly rolling expanses of grassland, semi-desert, or badlands in areas with sparse vegetation. Nest is a scrape of dirt often next to a grass clump or old cow manure pile.	This species may occur in or near the project area.
American dipper	<i>Cinclus mexicanus</i>	NESL Group 3; MBTA	Nest in ledges or crevices in stream bank structures of small cliffs, large rocks, fallen logs, and tree roots.	Habitat for this species may occur in or near the project area.
gray wolf	<i>Canis lupus</i>	ESA Endangered, Experimental nonessential	Montane woodlands and grasslands with adequate prey species such as deer and elk.	This species has not been documented in or near the project area.
black-footed ferret	<i>Mustela nigripes</i>	NESL Group 2; ESA Endangered, Experimental nonessential	Prairies and grasslands, especially where prairie dog towns are present.	Habitat for this species may occur in or near the project area.
bluehead sucker	<i>Catostomus discobolus</i>	NESL Group 4	Occupies a wide range of conditions within rivers and streams.	This species may occur in or near the project area.
roundtail Chub	<i>Gila robusta</i>	NESL Group 2	Warm water, mid-elevation streams.	This species may occur in or near the project area.
Colorado pikeminnow	<i>Ptychocheilus lucius</i>	NESL Group 2, ESA Endangered	Large, permanent streams.	The project area is likely within the Critical Habitat Boundaries. This species may occur in or near the project area.
mottled sculpin	<i>Cottus bairdi</i>	NESL Group 4	Adults prefer fast moving streams with a coarse gravel substrate while juveniles are found in slower moving section with a silt substrate. Prefers cool, clear, and swift mountain streams and rivers.	Habitat for this species may occur in or near the project area.

Table 2. Special Status Species with the Potential to Occur within or near the McElmo Creek Bridge Project Area, continued

Common Name	Scientific Name	Status	Habitat	Likelihood of Occurrence in Project Area
razorback sucker	<i>Xyrauchen texanus</i>	NESL Group 2; ESA Endangered	Riverine and lacustrine areas, generally not in fast moving water and may use backwaters.	The project area is likely within the Critical Habitat Boundaries. This species may occur in or near the project area.
bonytail chub	<i>Gila elegans</i>	ESA Endangered	Mainstream portions of mid- to large-sized rivers including pool and strong current areas, Currently found in isolated populations.	None are known to occur near the project area.
humpback chub	<i>Gila cypha</i>	ESA Endangered	Turbulent, high-gradient, canyon-bound reaches of the Colorado River drainage, limited to six populations.	None are known to occur near the project area.
northern leopard frog	<i>Rana pipiens</i>	NESL Group 2	Wetland areas including ditches, small streams, rivers, small ponds, marshes, lakes, and reservoirs.	This species may occur in or near the project area.
Cronquist milkvetch	<i>Astragalus cronquistii</i>	NESL Group 4	Salt desert shrub and blackbrush communities on sandy or gravelly soils derived from the Cutler and Morrison Formations. Elev. 4,750–5,800 feet.	This species is known to occur within three miles of the project area.
Navajo sedge	<i>Carex specuicola</i>	NESL Group 3; ESA Threatened	Silty soils at shady seeps and springs.	This species has not been documented in or near the project area.
waterfowl and shorebirds	-	MBTA	Perennial sources of water including lakes, streams, and reservoirs.	These species may be found in the project area, however, would likely not be affected by the project.

Status Abbreviation and Definitions

NESL = Navajo Endangered Species Lists

Group 1: Those species or subspecies that no longer occur on the Navajo Nation.

Group 2: Endangered; a species or subspecies whose prospects of survival or recruitment within the Navajo Nation are in jeopardy.

Group 3: Endangered; a species or subspecies whose prospects of survival or recruitment within the Navajo Nation are likely to be in jeopardy in the foreseeable future.

Group 4: Any species or subspecies for which the Navajo Nation Department of Fish and Wildlife does not currently have sufficient information to support their being listed in Groups 2 or 3 but has reason to consider them.

ESA = Federal Endangered Species Act

MBTA = Migratory Bird Treaty Act

EPA = Eagle Protection Act

These sources provided information regarding the threatened and endangered species and special status species known to occur, or that potentially may occur, on or near the project area. Qualified biologists with SWCA Environmental Consultants (SWCA) surveyed the area described above on August 18, 2005. The reconnaissance consisted of a pedestrian survey of

each distinctive vegetation type on the property. A U.S. Geological Survey (USGS) topographical map (USGS Aneth 7.5' Quadrangle) of the surrounding area and a project area map were used for locating the project boundaries and for general orientation.

It was determined that the proposed project is unlikely to impact any sensitive wildlife or plant species if the construction activity is limited to the 240-foot-wide right-of-way (ROW) surveyed and the proposed undertaking could be pursued without further consultation. Table 2 contains a list of special status species that may have habitat near the project area.

Fourteen federally listed endangered, threatened, and candidate species and fifteen species identified in the Navajo Nation Endangered Species lists are addressed in this BE (twenty-three total species due to overlap; Table 2).

No special status species listed in Table 2 were observed within the project area during the site survey. Those species listed in Table 2 that would not be impacted from the proposed road improvements because no suitable habitat was identified within the project area were omitted from further analyses. Table 3 lists special status species that have potentially suitable habitat within the project area and known range within the vicinity of the project area.

SPECIAL STATUS SPECIES EVALUATION

Species identified in Table 3 that may occur in the project site were evaluated for potential impacts from the proposed bridge replacement. Species biology, analysis of effects, and determination of effects are completed for each species.

GOLDEN EAGLE (*AQUILA CHRYSÆTOS*)

SPECIES BIOLOGY

The golden eagle is a large bird with a wingspan of approximately 7 feet. Its coloration is uniformly dark below, sometimes with a slight lightening at the base of the tail and obscure light bands across the tail. The hind-neck has a golden coloration that distinguishes the golden eagle from juvenile bald eagles (Peterson 1990). Golden eagles feed mainly on small- and medium-sized mammals but also consume birds, reptiles, and fish (Johnsgard 1990). They are widespread across mountainous regions of the northern hemisphere. Habitat for the species is badlands, mountains, foothills, plains, and open grasslands associated with rock outcrops and cliff formations (Peterson 1990, Mikesic and Nystedt 2001). These eagles typically nest on top of cliffs or in large trees with a surrounding view of the landscape (Peterson 1990, Johnsgard 1990). Foraging habitat is open country with available perches and shrub-steppe vegetation that provides habitat for large populations of prey such as rabbits (Johnsgard 1990).

ANALYSIS OF EFFECTS

The NNDFW identified the project area as having potential habitat for the golden eagle. Site reconnaissance confirmed that nesting habitat was not present. The site was identified as having minimal potential foraging habitat. The foraging habitat found within the proposed project is impacted by the presence of the road and livestock grazing, which makes the foraging habitat less desirable when compared to the surrounding area.

Table 3. Species with Suitable Habitat in the Project Area

Common Name	Scientific Name	Status
golden eagle	<i>Aquila chrysaetos</i>	NESL Group 3; MBTA; EPA
ferruginous hawk	<i>Buteo regalis</i>	NESL Group 3; MBTA
peregrine falcon	<i>Falco peregrinus</i>	NESL Group 4; MBTA
bald eagle	<i>Haliaeetus leucocephalus</i>	ESA Threatened; MBTA; EPA
mountain plover	<i>Charadrius montanus</i>	NESL Group 4; ESA Proposed threatened; MBTA
American dipper	<i>Cinclus mexicanus</i>	NESL Group 3; MBTA
southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	NESL Group 2; ESA Endangered; MBTA
black-footed ferret	<i>Mustela nigripes</i>	NESL Group 2; ESA Endangered, Experimental nonessential
Colorado pikeminnow	<i>Ptychocheilus lucius</i>	NESL Group 2, ESA Endangered
mottled sculpin	<i>Cottus bairdi</i>	NESL Group 4
razorback sucker	<i>Xyrauchen texanus</i>	NESL Group 2; ESA Endangered
roundtail chub	<i>Gila robusta</i>	NESL Group 2
bluehead sucker	<i>Catostomus discobolus</i>	NESL Group 4
northern leopard frog	<i>Rana pipiens</i>	NESL Group 2
Cronquist milkvetch	<i>Astragalus cronquistii</i>	NESL Group 4

Status Abbreviation and Definitions:

NESL = Navajo Endangered Species Lists

Group 1: Those species or subspecies that no longer occur on the Navajo Nation.

Group 2: Endangered; a species or subspecies whose prospects of survival or recruitment within the Navajo Nation are in jeopardy.

Group 3: Endangered; a species or subspecies whose prospects of survival or recruitment within the Navajo Nation are likely to be in jeopardy in the foreseeable future.

Group 4: Any species or subspecies for which the Navajo Nation Department of Fish and Wildlife does not currently have sufficient information to support their being listed in Groups 2 or 3 but has reason to consider them.

ESA = Federal Endangered Species Act

MBTA = Migratory Bird Treaty Act

EPA = Eagle Protection Act

DETERMINATION OF EFFECTS

The proposed development would have no effect on the golden eagle.

FERRUGINOUS HAWK (*BUTEO REGALIS*)**SPECIES BIOLOGY**

The ferruginous hawk is a large, narrow-winged hawk approximately 23–25 inches in length. It is red-tinted above and whitish below, with a red-tinted or whitish tail and a light patch on the upper surface of the primaries. Overhead, these hawks typically show a dark “V-pattern” formed

by the red-tinted thighs contrasting with the white belly (Peterson 1990). The species feeds almost entirely on grassland rodents and rabbits (Johnsgard 1990). Ferruginous hawks breed in western North America from southwestern Canada throughout the western United States and winter in northern Mexico and the Southwest. Habitat for the species is open plains, prairies, badlands, rolling desert grasslands, and desert scrub (Peterson 1990, Milkesic and Nystedt 2001). Optimum habitat is unbroken prairie grassland that is, at most, slightly grazed, with elevated nesting sites associated with hills and ridge systems separating broad, flat valleys (Johnsgard 1990). Nesting typically occurs on cliffs, rock pinnacles, small buttes, or in trees (Peterson 1990, Mikesic and Nystedt 2001).

ANALYSIS OF EFFECTS

Suitable nesting habitat for the ferruginous hawk is not present in the project area. Site reconnaissance concluded that the site does not have elevated structures that would provide suitable nesting habitat. Foraging habitat at the proposed site is minimal due to the small area being developed, the high level of disturbance that currently exists in the area, and grazing disturbance from domesticated animals.

DETERMINATION OF EFFECTS

The proposed developments would have no effect on the ferruginous hawk.

PEREGRINE FALCON (*FALCO PEREGRINUS*)

SPECIES BIOLOGY

Peregrine falcons nest on cliff ledges and occasionally on tall buildings. Nest sites are often near open water, and the same nest site may be used for many years. Females typically lay three or four eggs. Both adults share in the incubation duties. Chicks hatch after approximately 30 days, and young fledge from the nest 35 to 42 days after hatching (Ehrlich et al. 1988). Peregrine falcons feed almost exclusively on other birds, most of which are taken in flight.

Peregrine populations declined drastically starting in the 1940s as the result of eggshell thinning caused by organochloride pesticides, primarily DDT. Peregrine falcons in the eastern United States and eastern Canada were essentially extirpated by the mid 1960s, and peregrine populations in the western United States were also significantly reduced (64 FR 46542–46558). The American peregrine falcon was listed as endangered in 1970 (35 FR 8491). Peregrine populations rebounded with widespread reintroduction efforts following the ban of DDT. The species was removed from the endangered species list in August 1999 (64 FR 46542–46558).

ANALYSIS OF EFFECTS

The NNDFW identified the project area as having potential habitat for the peregrine falcon. However, site reconnaissance confirmed that nesting and foraging habitat was not present. The site was identified as having minimal potential foraging habitat. The foraging habitat found within the proposed project is impacted by the presence of SR-262 and livestock grazing, which makes the foraging habitat less desirable when compared to the surrounding area.

DETERMINATION OF EFFECTS

The proposed road improvements would have no effect on the peregrine falcon.

BALD EAGLE (*HALIAEETUS LEUCOCEPHALUS*)

SPECIES BIOLOGY

Bald eagles breed in most of central and southern Canada south to the Great Lakes and Maine, along the Atlantic and Gulf Coast, and along the Pacific Coast from Alaska to Baja California (Sibley 2000). There are also disjunct breeding populations where suitable habitat occurs in the interior United States. Bald eagle breeding habitat is characterized by large trees capable of supporting a nest and a nearby water source that provides an adequate supply of medium- to large-sized fish (Johnsgard 1990).

Bald eagles migrate from the northern portions of their range to winter in the southern United States and northern Mexico. Wintering habitats for bald eagles are less closely associated with water than are summer habitats (Evans 1982). Roost sites for bald eagles are usually in fairly open stands with trees that are taller than surrounding canopy (Stalmaster and Newman 1978, Keister and Anthony 1983). Bald eagles commonly eat fish, but will also consume ducks, rodents, snakes, and carrion.

The widespread use of DDT and other organochlorine compounds in the late 1940s through 1972 resulted in eggshell thinning and reproductive failure among bald eagles in the lower 48 states. Bald eagles were listed as endangered south of the fortieth parallel in 1967 (32 FR 4001) and as endangered throughout the lower 48 states in 1978, except in Michigan, Minnesota, Oregon, Washington, and Wisconsin, where the species was listed as threatened (43 FR 6233). Bald eagle populations began recovering after formal protection was established and DDT was banned. All bald eagles in the lower 48 states were reclassified as threatened in 1995 (60 FR 36000–36010). Bald eagles are currently proposed for delisting throughout their range (64 FR 36454–36464).

ANALYSIS OF EFFECTS

The NNDFW identified the project area as having potential habitat for the bald eagle. Site reconnaissance confirmed that nesting habitat is not present and there is minimal potential foraging habitat. The foraging habitat found within the proposed project is impacted by the presence of the road and livestock grazing, which makes the foraging habitat less desirable when compared to the surrounding area.

DETERMINATION OF EFFECTS

The proposed bridge construction would have no effect on the bald eagle.

MOUNTAIN PLOVER (*CHARADRIUS MONTANUS*)

SPECIES BIOLOGY

The mountain plover has a breeding range that includes most of Montana, Wyoming, and eastern Colorado, central to northern New Mexico, and the Oklahoma and Texas panhandles. The species has a wintering range that includes central California; and the southern parts of Arizona, New Mexico, and Texas.

The mountain plover nests in flat to slightly rolling expanses of grassland, semi-desert, or badlands, with short, sparse vegetation and large, bare areas often occupying more than one third of the total area. The mountain plover can typically be found in areas disturbed by grazing and will nest in plowed areas or cultivated fields. The nest of the mountain plover consists of a scrape in the dirt, often next to a clump of grass or cow manure.

The mountain plover is on the Navajo Endangered Species List Group 4, which means currently there is insufficient information to support listing as a Group 2 (prospects of survival or recruitment are in jeopardy) or Group 3 (prospects of survival or recruitment are likely to be in jeopardy in the foreseeable future) species.

ANALYSIS OF EFFECTS

The project area occurs on the Aneth quadrangle, which is within the area identified by the NNDFW as having potential nesting habitat for the mountain plover. However, breeding locations on the Navajo Nation are only known to occur in New Mexico. Suitable nesting and wintering habitat is present in the project area, however due to the high level of human disturbance and presence of an existing roadway, the habitat is of poor quality. No individuals were detected during site reconnaissance.

DETERMINATION OF EFFECT

The proposed developments would have no effect on the mountain plover.

AMERICAN DIPPER (*CINCLUS MEXICANUS*)

SPECIES BIOLOGY

The American dipper is found throughout the west in small, clear unpolluted streams where it forages exclusively for aquatic insects. Many American dippers spend their lives in one watershed, nesting in ledges, crevices, cliffs, large rocks and large woody debris. Usually dippers' nests are placed where water spray keeps the outer layers of the structure moist. The nests are about a foot in diameter and composed of an outer shell of moss and debris and small amounts of interwoven grass and roots, with an inner, cup-like lining of dry, coarse grass. The entrance to the nest is through a small hole in the side. Nests are often reused year after year. Dippers generally lay four eggs during the period from April through June. The young birds spend about 24 days in the nest.

ANALYSIS OF EFFECTS

McElmo Creek, as it runs through the project area, does not contain suitable habitat for the American dipper. The stream is turbid, carrying heavy loads of sand and silt throughout most of the year. Furthermore, nesting habitat is not present on the project area (i.e. large woody debris, cliffs or ledges).

DETERMINATION OF EFFECT

The proposed bridge realignment would have no effect on the American dipper.

SOUTHWESTERN WILLOW FLYCATCHER (*EMPIDONAX TRILLII EXTIMUS*)

SPECIES BIOLOGY

The southwestern willow flycatcher is one of four subspecies of the willow flycatcher. Its breeding range includes southern California, southern Nevada, southern Utah, Arizona, New Mexico, and southwestern Colorado. All subspecies of the willow flycatcher winter in Mexico and Central America (Sogge et al. 1997).

Southwestern willow flycatchers arrive on their breeding grounds between late April and mid-June (Sogge et al. 1997). The southwestern willow flycatcher breeds exclusively in dense riparian vegetation at elevations ranging from sea level to over 8,500 feet. Flycatcher nests are typically near open water or saturated soil. The dominant plant species, vegetation structure, and vegetation height vary widely among sites. Southwestern willow flycatchers are insectivorous, catching prey in the air or gleaning them from foliage (Ehrlich et al. 1988).

Threats to southwestern willow flycatchers include the widespread loss of riparian habitat throughout the southwestern United States. Fire has caused habitat loss at several breeding sites and is considered a critical threat to occupied and potential southwestern willow flycatcher habitat (Finch and Stoleson 2000). Southwestern willow flycatchers are also threatened by brood parasitism by brown-headed cowbirds (*Molothrus ater*). Increases in cowbird populations are associated with livestock grazing, agriculture, and forest cutting. The southwestern willow flycatcher was listed as endangered in 1995 (60 FR 10694–10715).

ANALYSIS OF EFFECTS

The site was identified by the NNDFW as having potential habitat for the southwestern willow flycatcher. The closest known breeding location is near Bluff, Utah, approximately twenty miles away. Very little dense riparian vegetation is found on the site, what is present grows in a narrow band along the edge of McElmo Creek. Additionally, the area is disturbed by the roadway, livestock, and human activity and is less desirable than habitat found along the San Juan River nearby.

DETERMINATION OF EFFECT

The proposed bridge replacement would have no effect on the southwestern willow flycatcher.

BLACK FOOTED FERRET (*MUSTELA NIGRIPES*)

SPECIES BIOLOGY

The black-footed ferret, a member of the weasel family (mustelids), was listed as endangered in 1970 (35 FR 8491–8498) and is one of the most rare mammals in North America. Black-footed ferrets were assumed to be extinct until a remnant population was discovered in 1981 near the town of Meeteetse in northwestern Wyoming (Forrest et al. 1985). This population was removed from the wild for captive breeding and reintroduction programs (Finch, 1992). Kits produced through this program have been released at several sites in the western United States, including the Coyote Basin area of Uintah County, Utah in late 1999. Although the black-footed ferret is an endangered species, the U.S. Fish and Wildlife Service have classified the re-introduced populations as “experimental-nonessential”. In addition to Utah's re-introduced black-footed ferret population, unconfirmed sightings of naturally occurring ferrets persist throughout eastern Utah (UDWR 2005b).

Ferrets exhibit a wide tolerance of environmental conditions and historically occupied habitats that ranged from the eastern plains to middle-elevation intermontane basins and elevated montane valleys in excess of 8,000 feet. Historic distribution of black-footed ferrets closely paralleled that of prairie dog species (Hubbard and Schmitt 1984).

The dependency of the black-footed ferret on prairie dogs as a food item is so great that reduction in numbers of ferrets is directly related to reduction in prairie dog numbers (Hoffmeister, 1986). It has been assumed that the ferret is almost totally dependent on the prairie dog, preying on it as a preferred source of food (Hubbard et al. 1979).

Loss of habitat is the primary reason black-footed ferrets remain near the brink of extinction. Conversion of grasslands to agricultural uses, widespread prairie dog eradication programs and plague have reduced ferret habitat to less than 2 percent of what once existed. Remaining habitat is now fragmented, with prairie dog towns separated by great expanses of cropland and human development. Many other sensitive species such as burrowing owls, mountain plovers, golden eagles, swift fox, and ferruginous hawks are strongly linked to this habitat for their survival (Forrest et al. 1985).

ANALYSIS OF EFFECTS

The NNDFW identified the project area as having potential habitat for the black-footed ferret. Site reconnaissance confirmed that prairie dog towns required for foraging and den sites were not present in the project area.

DETERMINATION OF EFFECTS

Due to the dependence of black-footed ferrets on prairie dog towns for survival and the absence of these habitats in the project area, the project would have no effect on the black-footed ferret.

COLORADO PIKEMINNOW (*PTYCHOCHEILUS LUCIUS*)

SPECIES BIOLOGY

This species was first reported in the upper basin of the Colorado River in 1825 (Morgan 1964) where it was common in the Green and Upper Colorado rivers and their tributaries (Banks 1964, Vanicek 1967, Holden and Stalnaker 1975). Wild populations of Colorado pikeminnow are now found only in the upper Colorado River basin in the Green, Colorado, and San Juan rivers and many of their major tributaries. The species currently occupies only about 25 percent of its historic range basin-wide.

The Colorado pikeminnow was first listed as endangered in 1967 (32 FR 4001). Full protection under the Endangered Species Act (as amended) occurred upon its listing in the Federal Register (39 FR 1175) on January 4, 1974. Critical habitat was designated on March 21, 1994 (59 FR 13374–13400) and includes the San Juan River and its 100-year floodplain.

Colorado pikeminnow live in warm regions of the mainstem and larger tributaries of the Colorado River basin. Adults occupy deep, low-velocity eddies, pools, and runs year-round (Valdez and Masslich 1989; Tyus 1990, 1991) and frequent seasonally flooded bottomlands in spring (Tyus 1991). Spawning occurs in canyon areas over cobble substrates with interstitial voids containing little or no organics (Lamarra et al. 1985, Tyus and Haines 1991). Young emerge as larvae and drift downstream to shallow backwaters in sandy, alluvial regions, where they remain through most of their first year of life (Holden 1977, Tyus and Haines 1991, Muth and Snyder 1995).

Young Colorado pikeminnow remain near nursery areas for the first 2–4 years of life and then move upstream to recruit to adult populations and establish home ranges (Osmundson et al. 1998). Adult Colorado pikeminnow remain in home ranges during fall, winter, and spring and may move considerable distances to and from spawning areas in summer. Adults may return in consecutive years to overwinter in the same areas (Wick et al. 1981, Valdez and Masslich 1989).

Adult Colorado pikeminnow are piscivorous and are the main predator in the Colorado River basin (Vanicek and Kramer 1969, Minckley 1973, Holden and Wick 1982). Cladocerans, copepods, and midge larvae are the principal food items of young up to 2 inches long in nursery backwaters (Vanicek 1967, Jacobi and Jacobi 1982, Muth and Snyder 1995). Insects became important food items for fish up to 4 inches in length. Adults consume primarily soft-rayed fishes, including bluehead sucker (*Catostomus discobolus*), flannelmouth sucker (*C. latipinnis*), red shiners (*Cyprinella lutrensis*), sand shiners (*Notropis stramineus*), and fathead minnows (*Pimephales promelas*) (Osmundson 1999).

Declines in Colorado pikeminnow populations have been attributed to habitat alteration and interactions with non-native fishes. Historically, Colorado pikeminnow migrated long distances to spawn. Over 20 dams on the mainstem Colorado River and its tributaries have interrupted migration patterns and altered habitats above and below the dams. The dams have altered the natural hydrograph, reducing spring runoff, increasing summer base flows, increasing daily fluctuations, and greatly reducing water temperatures immediately below the dams. The former seasonal variation in flows was important in provide spawning cues and in preparing and

maintaining spawning and nursery habitat. The cold temperatures below the dams exclude warm-water species of native fishes. The introduction and proliferation of many species of exotic fishes have also been implicated in the decline of Colorado pikeminnow through competition and predation, particularly of young fish (USFWS 1991).

ANALYSIS OF EFFECTS

The project area is contained within Critical Habitat for Colorado pikeminnow. Pikeminnow are known to occur in the San Juan River (Ryden 2005 pers. comm.) and juveniles may utilize McElmo Creek when the San Juan River is high enough to create backwaters and areas of low water velocity in McElmo Creek.

The proposed new bridge would span McElmo Creek, eliminating the need for piers in the creekbed. There may be temporary disturbances to McElmo Creek during removal of the pier supporting the existing bridge in the form of sediment. To minimize the possibility of impacts to the Colorado pikeminnow, if present, we recommend the existing pier be removed during the months when flows are lowest in the San Juan River. This would ensure that there would be no backwater habitat at the mouth of McElmo Creek that could be utilized by this species. Flows in McElmo Creek and the San Juan River are lowest during the winter months of November–January (USGS 2005). There may be temporary surface disturbances near the stream bank top during construction. Neither water chemistry nor quantity would be affected by proposed activities.

Protection for Colorado pikeminnow and other fish species that may utilize McElmo Creek and the San Juan River would be offered through standard EPA permitting requirements. This project would require the issuance of an National Pollutant Discharge Elimination System (NPDES) permit and the formulation of a Storm Water Pollution Prevention Plan (SWPPP) that implements Best Management Practices (BMP), including structural and operational controls, to prevent the migration of pollutants (including sediments) from construction storm water runoff into McElmo Creek. Proper implementation of the SWPPP must be conducted to afford adequate protection to eliminate potential impacts to Colorado pikeminnow and their critical habitat.

DETERMINATION OF EFFECTS

Potential negative impacts to Colorado pikeminnow and their critical habitat would be reduced or eliminated with the implementation of the SWPPP as required by the EPA for this project. If the SWPPP is implemented properly, this project would have no effect on the Colorado pikeminnow or their critical habitat.

MOTTLED SCULPIN (*COTTUS BAIRDI*)

SPECIES BIOLOGY

The mottled sculpin is a small, bottom-dwelling, ‘cold-water’ fish native to areas in both eastern and western North America. This wide distribution is likely due to its marine ancestry. The species is native to Utah and common in many of Utah's coldwater streams (BISON 2005).

Mottled sculpin are native to the San Juan River basin including the Pine, Navajo, Animas, and San Juan rivers upstream from Shiprock (Sublette et al 1990).

The mottled sculpin lives between and beneath rocks in riffles of cool streams, or, occasionally, in lakes (Sublette et al 1990). Mottled sculpin are most often found on clean rock substrates composed of boulder, cobble, and pebble; however, adult females show an affinity for silty substrates, occurring there twice as often as either males or immature fish (Matheson and Brooks 1983, Zarbock 1952). Trout predation can devastate mottled sculpin populations in areas where adequate cover habitat is not available.

Mottled sculpin feed at night, primarily on aquatic insect larvae, supplemented by small fishes, crayfish, fish eggs, and plant matter. Sculpins may also consume trout eggs and are potential competitors with trout for food resources (Sigler and Sigler 1996).

The mottled sculpin spawns from late winter through the spring. Male sculpin spawn with multiple females, and then guard the eggs for approximately 14–20 days until they hatch. Eggs adhere to the bottom under rubble/cobble or among gravel or under objects (Sublette et al. 1990).

ANALYSIS OF EFFECTS

Habitat for the mottled sculpin does not occur in the project area. Mottled sculpin are considered a cold-water species, similar to trout, and temperatures in McElmo Creek are generally warmer.

Protection for fish species that may utilize McElmo Creek would be offered through standard EPA permitting requirements. This project would require the issuance of an NPDES permit and the formulation of a SWPPP that implements BMPs including structural and operational controls, to prevent the migration of pollutants (including sediments) from construction storm water runoff into McElmo Creek. Proper implementation of the SWPPP must be conducted to afford adequate protection to eliminate potential impacts to mottled sculpin.

The Navajo Nation Department of Fish and Wildlife suggests measures to avoid disturbance to mottled sculpin, in areas where it occurs. These include no surface disturbance within 30–60 m of the stream bank top as well as proper water chemistry maintenance.

DETERMINATION OF EFFECTS

The proposed project would have no effect on mottled sculpin.

RAZORBACK SUCKER (*XYRAUCHEN TEXANUS*)

SPECIES BIOLOGY

The razorback sucker was first described in 1860. The distribution and abundance of razorback suckers declined during the twentieth century throughout their historical range. The species currently exists naturally only in a few small, discontinuous populations or as dispersed individuals. The species was listed as endangered in 1991 (56 FR 54957), and critical habitat

was designated in 1994 (59 FR 13374–13400) including the San Juan River and its 100-year flood plain.

Razorback suckers continue to spawn and produce larvae but very few juveniles have been found, and substantial natural recruitment has not occurred in the last 40–50 years. The wild population, composed primarily of aging adults, is in steep decline. In the lower basin of the Colorado River, the species was extirpated from the Salton Sea by the late 1920s and from the Gila River drainage by the late 1960s (Minckley et al. 1991, Muth et al. 2000). Razorback suckers have persisted in the lower mainstem Colorado River, concentrating in Lakes Mohave and Mead (Minckley 1983). Few and decreasing numbers of wild fish have also been caught in Lake Havasu, at several other locations along the river, and in water diversion facilities (Bozek et al. 1991, Minckley et al. 1991). Only eight razorback suckers were captured in the Grand Canyon reach between 1978 and 1990 (Valdez 1996), although several suckers that appear to be razorback/flannelmouth sucker (*Catostomus latipinnis*) hybrids have been reported (Suttkus et al. 1976, Maddux et al. 1987, Valdez and Ryel 1995, Douglas and Marsh 1999).

Adult razorback suckers tend to occupy different habitats seasonally, and can do well in both still and moving water (Minckley et al. 1991). In rivers, they are most often found in low-velocity currents and more rarely in turbulent canyon reaches (Tyus 1987, Lanigan and Tyus 1989, Tyus and Karp 1990, Bestgen 1990, Minckley et al. 1991). Bottomlands, low-lying wetlands, and oxbow channels appear to be important habitats for all life stages of razorback sucker in the upper basin of the Colorado River (Modde et al. 1996, Muth et al. 2000), including the Green and San Juan rivers. These areas provide warm water temperatures, low-velocity flows, and increased food availability (Tyus and Karp 1990, Modde 1997, Wydoski and Wick 1998). Temperature is an important aspect of habitat for razorback suckers. Thermal preference for adults was 22.9–24.8°C, based on electronic shuttle box studies. Lower avoidance temperature was 8.0–14.7°C, and upper avoidance temperature was 27.4–31.6°C (Bulkley and Pimentel 1983).

During the breeding season (mostly April–June), when river flows are high, adult razorback suckers congregate in flooded bottomlands and gravel pits, backwaters, and impounded tributary mouths near spawning sites (Holden and Crist 1981, Valdez and Wick 1983, Tyus 1987, Tyus and Karp 1990, Modde and Wick 1997, Modde and Irving 1998). Within the last 20 years, aggregations of razorback suckers have been observed in these types of environments, usually upstream of areas with broad floodplains (Tyus et al. 1982, Valdez et al. 1982, Modde et al. 1996).

Young razorback suckers are thought to occupy shallow, warm, low-velocity habitats in littoral zones, backwaters, and inundated floodplains and tributary mouths downstream of spawning bars. This inference is based on the few larval and young juveniles collected in the upper basin, observations of hatchery-reared fish, and analogy with other native fish in the Colorado River system (Smith 1959; Sigler and Miller 1963; Taba et al. 1965; Tyus 1987; Minckley et al. 1991; Modde 1996, 1997). Young-of-year appear to stay in these sheltered habitats for several weeks after hatching and then disperse to deeper water (Minckley et al. 1991). In lakeside rearing ponds in the lower basin, juvenile razorback suckers hide during the day in dense aquatic vegetation, under debris, and in rock cavities (USBOR 1996).

All life stages of razorback sucker consume insects, zooplankton, phytoplankton, algae, and detritus; however, diet varies by age and habitat (Bestgen 1990, Muth et al. 2000). Within several days of hatching, larval razorback suckers begin to feed on plankton (Muth et al. 2000). As the terminal mouth migrates to a sub-terminal position, they begin feeding on benthos as well (Marsh and Minckley 1985). Muth et al. (1998) reported that in riverine environments in the upper basin, chironomids constituted the dominant food item for razorback sucker larvae of all lengths. Chironomids are among most common benthic invertebrates in riverine nursery habitats of the upper basin. The diet of riverine adult razorback suckers consists mostly of benthic organisms (immature Ephemeroptera, Trichoptera, and Chironomidae) and lesser amounts of algae, detritus, and inorganic material.

Declines in razorback sucker populations have been attributed to interactions with non-native fishes, habitat destruction and alteration, and changes in water quality. River impoundments that result in perennially cold temperatures downstream may affect reproduction (Minckley et al. 1991).

ANALYSIS OF EFFECTS

The project area is contained within Critical Habitat for razorback sucker as designated in 1994 (59 FR 13374–13400). Critical habitat includes the San Juan River and the 100-year flood plain, which extends into McElmo Creek and the project area. A gravel bar on the San Juan River located approximately 2,600 feet downstream of the confluence with McElmo Creek has been identified as an active spawning location for razorback suckers (Ryden 2005 pers. comm.). Razorback suckers generally spawn from April to May in this reach of the San Juan River and juvenile suckers may utilize McElmo Creek when the San Juan River is high enough to create backwaters and areas of low water velocity in McElmo Creek.

The proposed new bridge would span McElmo Creek, eliminating the need for piers in the creekbed. There may be temporary disturbances to McElmo Creek during removal of the pier supporting the existing bridge in the form of sediment. To minimize the possibility of impacts to the razorback sucker, if present, we recommend the existing pier be removed during the months when flows are lowest in the San Juan River. This would ensure that there would be no backwater habitat at the mouth of McElmo Creek that could be utilized by this species. Flows in McElmo Creek and the San Juan River are lowest during the winter months of November–January (USGS 2005). There may be temporary surface disturbances near the stream bank top during construction. Neither water chemistry nor quantity would be affected by proposed activities.

Protection for razorback sucker and other fish species that may utilize McElmo Creek and the San Juan River would be offered through standard EPA permitting requirements. This project would require the issuance of an NPDES permit and the formulation of a SWPPP that implements BMPs, including structural and operational controls, to prevent the migration of pollutants (including sediments) from industrial storm water runoff into McElmo Creek. Proper implementation of the SWPPP must be conducted to afford adequate protection to eliminate potential impacts to razorback suckers and their critical habitat.

DETERMINATION OF EFFECTS

Potential negative impacts to razorback suckers and their critical habitat would be reduced or eliminated with the implementation of the SWPPP as required by the EPA for this project. If the SWPPP is implemented properly during construction and completion of the project, the project would have no effect on razorback suckers or their critical habitat.

ROUNDTAIL CHUB (*GILA ROBUSTA*)

SPECIES BIOLOGY

The roundtail chub is a member of the minnow family (Cyprinidae). It is in the taxonomically difficult genus *Gila*, which includes perhaps 30 species spread over western North America. Many members of the genus are classified as rare, threatened, or endangered. Eight species are known from Arizona, five of which are endemic to the Colorado River basin (Weedman et al. 1996). The taxonomy of the roundtail chub has been controversial, with four subspecies variously recognized (BISON 2005).

Roundtail chub are known from the larger tributaries of the Colorado River basin from Wyoming south to Arizona and New Mexico, as well as from the Rio Yaqui in northwestern Mexico. This species is now rare in most of the larger river portions of the Gila, Salt, and Verde rivers and was extirpated from the Zuni and San Francisco rivers in New Mexico by 1948 (BISON 2005). It persists in the tributaries of the Gila and San Juan basins in New Mexico (BISON 2005) and in the mainstem tributaries of the Verde and Salt Rivers in Arizona, as well as in canals in metropolitan Phoenix (AGFD 1996, 2005).

Roundtail chub occupy small streams to large rivers in mid elevation areas (2,000-5,000 feet). Adults are often found in deep pools or in eddies adjacent to riffles and runs (Minckley 1973, Brouder et al. 2000). Cover is usually present in the form of large boulders, submerged trees or branches, rootwads, undercut cliff walls, or deep water (AGFD 2005). Young roundtail chub generally occupy quiet backwaters and other shallow, low-velocity water adjacent to overhead bank cover. All age groups prefer cobble-rubble, sand-cobble, or sand-gravel substrates (BISON 2005).

Roundtail chub are opportunistic feeders, consuming aquatic and terrestrial insects, gastropods, crustaceans, other fishes, and filamentous algae. Young roundtail chub feed on small insects, crustaceans, and algae (reviewed by Girmendonk and Young 1997).

Roundtail chub reproduce in late spring and early summer. Spawning generally coincides with subsidence of spring runoff and may be induced by increasing water temperature. Adhesive eggs are laid in pools and moderate-velocity runs with gravel and cobble substrates, generally in association with submerged cover (AGFD 2005).

Declines in roundtail chub populations have been attributed to interactions with non-native fishes, habitat destruction and alteration, and changes in water quality. Populations of roundtail chub have been reduced or eliminated by competition with and predation by non-native fishes and by habitat alteration (AGFD 1996). River impoundments that result in perennially cold temperatures downstream may affect reproduction (Minckley et al. 1991).

Roundtail chub are most prevalent in the upper Colorado River basin in the Mancos River and the San Juan River from Shiprock to Aneth (Mikesic et al. 2005)

ANALYSIS OF EFFECTS

Habitat for roundtail chub does not occur in the project area. Cover, in the form of large boulders, submerged trees or branches, rootwads, undercut cliff walls, or deep water is not present in the project.

The proposed new bridge would span McElmo Creek, eliminating the need for piers in the creekbed. There may be temporary disturbances to McElmo Creek during removal of the pier supporting the existing bridge in the form of sediment. To minimize the possibility of impacts to the roundtail chub, if present, we recommend the existing pier be removed during the months when flows are lowest in the San Juan River. This would ensure that there would be no backwater habitat at the mouth of McElmo Creek that could be utilized by this species. Flows in McElmo Creek and the San Juan River are lowest during the winter months of November–January (USGS 2005). There may be temporary surface disturbances near the stream bank top during construction. Neither water chemistry nor quantity would be affected by proposed activities.

Protection for fish species that may utilize McElmo Creek and the San Juan River would be offered through standard EPA permitting requirements. This project would require the issuance of an NPDES permit and the formulation of a SWPPP that implements BMPs including structural and operational controls, to prevent the migration of pollutants (including sediments) from construction storm water runoff into McElmo Creek. Proper implementation of the SWPPP must be conducted to afford adequate protection to eliminate potential impacts to roundtail chub.

DETERMINATION OF EFFECTS

Potential negative impacts to roundtail chub would be reduced or eliminated with the implementation of the SWPPP as required by the EPA for this project. If the SWPPP is implemented properly, this project would have no effect on roundtail chub.

BLUEHEAD SUCKER (*CATOSTOMUS DISCOBOLUS*)

SPECIES BIOLOGY

The bluehead sucker is a member of the sucker family (Catostomidae). This family includes perhaps 23 species in North America. Many members of the genus are classified as rare, threatened, or endangered. Six species are known from the Colorado Basin, including two subspecies of *C. discobolus* and *C. yarrowi* (Zuni population; Smith et al. 1983, Crabtree and Buth 1987). The taxonomy of the two subspecies has been controversial (AGFD 2005).

Bluehead suckers occur in the Colorado River basin in Arizona, Colorado, Utah and New Mexico upstream of Lake Mead, as well as from the Snake River (above Shoshone Falls), the Bear River, and Weber River drainages of the Bonneville Basin throughout Idaho, Wyoming and Utah. They are known to occur in the tributaries of the San Juan drainage in Utah (Mikesic et al. 2005).

Bluehead suckers occupy high gradient small streams to large rivers in mid elevation (2,000–6,700 feet) areas of the basin (Sublette et al. 1990) They do not occur in reservoirs. Adults are often found in deep pools or in eddies when water is clear and move into shallow areas at night. Young bluehead suckers generally occupy quiet backwaters and other shallow, low-velocity water adjacent to stream margins (AGFD 2005). Bluehead suckers have a wide temperature tolerance.

Bluehead suckers feed on algae, diatoms, organic debris and immature aquatic invertebrates by scraping rocks and other hard substrates with a cartilaginous mouth structure (Minckley 1973).

Bluehead suckers spawn in aggregations in late spring and early summer when water temperatures exceed 60°F. Spawning occurs over gravel, sand, and cobble-gravel substrates (Minckley 1973). Young appear in late summer and fall.

Declines in bluehead sucker populations have been attributed to interactions with non-native fishes, loss of riverine habitat, and changes in water quality. Populations of bluehead suckers have been reduced or eliminated by competition with and predation by non-native fishes and by habitat alteration (AGFD 2005). River impoundments that result in perennially cold temperatures downstream may affect reproduction (Minckley 1973, AGFD 2005).

ANALYSIS OF EFFECTS

Bluehead sucker habitat, such as deep pools or eddies with clear water is not present in the proposed project area. Protection for fish species that may utilize McElmo Creek and the San Juan River would be offered through standard EPA permitting requirements. This project would require the issuance of an National Pollutant Discharge Elimination System (NPDES) permit and the formulation of a Storm Water Pollution Prevention Plan (SWPPP) that implements Best Management Practices (BMP) including structural and operational controls, to prevent the migration of pollutants (including sediments) from industrial storm water runoff into McElmo Creek. Proper implementation of the SWPPP must be conducted to afford adequate protection to eliminate potential impacts to bluehead suckers.

The proposed new bridge would span McElmo Creek, eliminating the need for piers in the creekbed. There may be temporary disturbances to McElmo Creek during removal of the pier supporting the existing bridge in the form of sediment. To minimize the possibility of impacts to bluehead suckers, if present, we recommend the existing pier be removed during the months when flows are lowest in the San Juan River. This would ensure that there would be no backwater habitat at the mouth of McElmo Creek that could be utilized by this species. Flows in McElmo Creek and the San Juan River are lowest during the winter months of November–January (USGS 2005). There may be temporary surface disturbances near the stream bank top during construction. Neither water chemistry nor quantity would be affected by proposed activities.

DETERMINATION OF EFFECTS

Potential negative impacts to bluehead suckers would be reduced or eliminated with the implementation of the SWPPP as required by the EPA for this project. If the SWPPP is implemented properly, this project would have no effect on bluehead suckers.

NORTHERN LEOPARD FROG (*RANA PIPIENS*)

SPECIES BIOLOGY

The Northern leopard frog is found throughout the Great Basin region of the western U.S. and into Canada. It occupies a variety of habitats, from streams to stockponds at elevations that range from sea level to 11,000 feet (Stebbins 1985). The northern leopard frog grows to a maximum length of 4.5 inches. It receives its name from the dark, circular spots on its back. The background color can be green, brown or a combination of both. While it is one of the more cold tolerant anuran species in North America, the northern leopard frog requires a freeze free hibernation site. Northern leopard frogs often retreat to the water to escape freezing conditions. Tadpoles consume algae, plant tissue, and organic debris, while adult frogs eat insects and other small invertebrates (AGFD 2002).

Adult Northern leopard frogs are semi-terrestrial and maintain home ranges of up to 600 square meters during the summer. Within the home range, Northern leopard frogs spend much of their time in small clearings of damp soil and prefer open, grassy sites, which has given them one of their common names, the meadow frog. Northern leopard frogs are also found in dense cattail habitats (Stebbins 1985).

ANALYSIS OF EFFECTS

The site was identified by the NNDFW as having potential habitat for Northern leopard frogs. Within the project area, McElmo Creek is confined to fairly narrow channel with steep cutbanks on either side. No slack water or wetland vegetation is present. Suitable habitat for Northern leopard frogs does not exist within the project area due to the absence of dense cattail habitat, the absence of moist soils, the high level of human disturbances and the grazing impacts from domesticated animals.

DETERMINATION OF EFFECT

The proposed developments would have no effect on Northern leopard frogs.

CRONQUIST'S MILKVETCH (*ASTRAGALUS CRONQUISTII*)

SPECIES BIOLOGY

Cronquist's milkvetch is a perennial plant that is a member the pea family (Fabaceae). Flowers are pink-purple and appear from late April to June (Mikesic et al 2005). This milkvetch grows from a stout taproot on the low sandstone ridges in extreme southeastern Utah and adjacent southwestern Colorado (Utah 2003–2005). This species is distinguished by ample foliage and subsessile, trigonously compressed and partially bilocular pods. Cronquist's milkvetch is found

in salt desert shrub and blackbrush communities on sandy and gravelly ridges from the Cutler and Morrison Formations (Mikesic et al 2005). Elevational range for this species is 4,800–5,800 feet.

A population of Cronquist's milkvetch is known from the Aneth area.

ANALYSIS OF EFFECTS

The elevational range and the substrate types where Cronquist's milkvetch grows occur at the project site, however, careful scrutiny of the site revealed no *Astragalus* species were found to be growing within project boundaries. The site is severely disturbed by human activities, the roadway, and grazing, making the presence of Cronquist's milkvetch unlikely.

DETERMINATION OF EFFECTS

Suitable habitat for the Cronquist's milkvetch exists within the project area; however due to the high level of human disturbances and presence of domesticated animals, the habitat is of poor quality. No individuals were detected during site reconnaissance. The proposed developments would have no effect on the Cronquist's milkvetch.

CONCLUSIONS

The USFWS and the Navajo Nation have identified twenty-three listed and candidate species that may occur in the project area. No special status species were observed during site reconnaissance. Due to the high level of human disturbances within and surrounding the project area, the lack of suitable habitat that would be impacted, and the presence of domesticated animals, the proposed road improvements would have no effect on any terrestrial species. Although it is not known if special status fish species occur in McElmo Creek, there may be temporary adverse effects to the habitat for the Colorado pikeminnow, razorback sucker, bluehead sucker and roundtail chub, if they are present. There would be no permanent modifications to critical habitat constituent elements, including water chemistry or quantity as a result of this project. Potential adverse effects to McElmo Creek can be reduced or eliminated with the implementation of the SWPPP as required by the EPA for this project. Only if the SWPPP is implemented properly would this project have no effect on Colorado pikeminnow and razorback suckers or their critical habitat as well as bluehead suckers and roundtail chub. With the proper implementation of the SWPPP, the proposed construction of the bridge would not have an effect on any tribal or federally listed and candidate species.

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